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UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF GEORGIA  
GAINESVILLE DIVISION

VIDEOTAPED DEPOSITION OF CHARLES CROSBY, P.E.

Phoenix, Arizona

May 14, 2024

9:00 a.m.

**REPORTED BY:**

Robin L. B. Osterode, CSR, RPR

CA Certified Shorthand Reporter No. 7750

AZ Certified Reporter No. 50695

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1	VIDEOTAPED DEPOSITION OF CHARLES CROSBY	
2	commenced at 9:00 a.m. on May 14, 2024, at Phoenix,	
3	Arizona, before Robin L. B. Osterode, CSR, RPR,	
4	California Shorthand Reporter No. 7750 and Arizona	
5	Certified Reporter No. 50695.	
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8	* * *	
9		
10	APPEARANCES:	
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21	John Maniscalco	
22		
23		
24		
25		
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1	I N D E X	
2	EXAMINATION BY PAGE	
3	Ms. Cannella..... 6	
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6	EXHIBITS DESCRIPTION PAGE	
7	Exhibit 103 Exponent Press Release entitled 7	
	"Exponent Reports Fourth Quarter	
9	and Fiscal Year 2023 Financial	
	Results"; 12 pages	
10	Exhibit 104 Partial transcript of jury 14	
11	trial, dated April 6, 2016;	
	3 pages	
12	Exhibit 105 Preliminary Statement in Hill 9	
13	v. Ford Motor; 5 pages	
14	Exhibit 106 Business Ethics article, 20	
	entitled "Legal Scrapes Turn	
15	to Science-for-Hire Giant	
	Exponent"; 23 pages	
16	Exhibit 107 Testimony List of Charles 30	
17	Crosby, P.E.; 1 page	
18	Exhibit 108 Letter to Richard H. Hill, 31	
	III from Charles Crosby,	
19	P.E., dated March 29, 2024;	
	2 pages	
20	Exhibit 109 Document entitled "Injury 35	
21	Patterns and Effective	
22	Countermeasures for Vehicle	
	Collision Compatibility";	
23	8 pages	
24	Exhibit 110 Text message exchanges; 39	
25	10 pages	

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<p>1           CHARLES CROSBY,      2 called as a witness herein, having been first duly      3 sworn, was examined and testified as follows:      4      5           MS. CANNELLA: I just wanted to tell you,      6 Rick, that I don't have extra copies, because I was      7 traveling, so everything's double-sided, and I have      8 two copies of everything and you can see whatever it      9 is.      10          MR. HILL: That's fine.</p> <p>11</p> <p>12           E X A M I N A T I O N</p> <p>13 BY MS. CANNELLA:</p> <p>14          Q. Okay. Good morning, Mr. Crosby. How are      15 you doing?</p> <p>16          A. Good morning. I'm great.</p> <p>17          Q. Exponent is your employer, correct?</p> <p>18          A. That's correct.</p> <p>19          Q. And Exponent has 30 -- over 30 offices      20 worldwide?</p> <p>21          A. Yes.</p> <p>22          Q. And it has about a thousand consultants; is      23 that correct?</p> <p>24          A. That's my understanding, yes.</p> <p>25          Q. And Exponent's revenues are over half a</p>	<p>1           Q. Okay. And Exponent is a public company, as      2 you mentioned, correct?</p> <p>3          A. That's correct.</p> <p>4          Q. And its shares are sold and traded on the      5 stock market?</p> <p>6          A. Yes.</p> <p>7          Q. So one of Exponent's goals is to deliver      8 growth and profits to its shareholders.</p> <p>9           Do you agree?</p> <p>10         A. As any company, it's trying to make money,      11 so yeah.</p> <p>12         Q. Okay. And Exponent CEO and president is      13 Dr. Catherine Corrigan, correct?</p> <p>14         A. Yes.</p> <p>15         Q. She's been testifying for the auto industry      16 for decades; you're aware of that, correct?</p> <p>17         MR. HILL: Object to the form.</p> <p>18         Go ahead.</p> <p>19         THE WITNESS: Yes.</p> <p>20 BY MS. CANNELLA:</p> <p>21         Q. And isn't it true Exponent was formally      22 called Failure Analysis Associates?</p> <p>23         A. Yes.</p> <p>24         Q. And do you agree that FAA's main clients      25 and Exponent's main clients have always been auto</p>
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<p>1 billion dollars a year.</p> <p>2           Do you agree with that?</p> <p>3          A. I -- I don't keep up on the exact revenues      4 of the company, but it is publicly traded, so that's      5 all knowledge that can be Google searched.</p> <p>6          Q. Okay. I'm going to hand you what I've      7 previously marked as Plaintiffs' Exhibit 102. I'll      8 give it to your lawyer first.</p> <p>9          Oh, you know what, I gave you the wrong      10 thing, Rick. Sorry. Let me give you what I      11 previously marked as Plaintiffs' Exhibit 103.</p> <p>12          MR. HILL: Here you go.</p> <p>13          (Marked for identification Exhibit 103.)</p> <p>14 BY MS. CANNELLA:</p> <p>15          Q. Okay. This is a printout of the Exponent      16 website.</p> <p>17          Do you see that on the bottom lower corner      18 with the Exponent website address there?</p> <p>19          A. Yes.</p> <p>20          Q. Can you turn to page 4 with me.</p> <p>21          A. Yes.</p> <p>22          Q. And that first highlighted sentence there      23 says, "Total revenues increased to 4.6 percent to      24 \$536.8 million for fiscal year 2023," correct?</p> <p>25          A. Yeah.</p>	<p>1 manufacturers?</p> <p>2          A. No.</p> <p>3          Q. Do you agree that Exponent's work for the      4 auto industry is one of its main sources of revenue?</p> <p>5          A. No.</p> <p>6          Q. Okay. Can you turn with me to -- on      7 Plaintiffs' Exhibit 103, at page 5. And that      8 highlighted sentence there says, "Growth during the      9 quarter and full year was driven by demand for      10 Exponent services across the transportation and      11 energy sectors."</p> <p>12         Did I read that correctly?</p> <p>13         A. Yes.</p> <p>14         Q. Isn't it true that Ford paid Exponent over      15 \$155 million in about 10 years?</p> <p>16         MR. HILL: Object to the form.</p> <p>17         Go ahead.</p> <p>18         THE WITNESS: I don't know that answer, no.</p> <p>19         MS. CANNELLA: Okay. I'm going to hand you      20 what I previously marked as Plaintiffs' Exhibit 105.      21         (Marked for identification Exhibit 105.)</p> <p>22 BY MS. CANNELLA:</p> <p>23         Q. And these are verified interrogatory      24 responses. If you could turn to page 3 of those.      25           You see that highlighted sentence there?</p>

<p>Page 10</p> <p>1 A. Yes.      2 Q. And it says that Ford has paid Exponent      3 from, I believe it was 2006 to 2017, \$155 million and      4 change; is that correct?      5 A. No.      6 MR. HILL: Object to the form.      7 Go ahead.      8 BY MS. CANNELLA:      9 Q. Go ahead.      10 A. The paper here says 1996 to 2017.      11 Q. 1996 to 2017 is \$155 million and change,      12 correct?      13 A. Yes.      14 Q. And isn't it true Exponent has defended      15 corporations in all kinds of cases?      16 MR. HILL: Object to the form.      17 THE WITNESS: Yes.      18 BY MS. CANNELLA:      19 Q. Exponent spoke for Exxon Valdez      20 regarding the -- strike that, sorry.      21 Exponent testified on behalf of Exxon      22 regarding the Valdez oil spill, correct?      23 MR. HILL: Object to the form.      24 But go ahead.      25 THE WITNESS: I don't know the -- the full</p>	<p>Page 12</p> <p>1 single client that Exponent has.      2 BY MS. CANNELLA:      3 Q. Have you been told to answer a question      4 about specific cases that you don't know every single      5 case Exponent has ever worked on?      6 A. No.      7 Q. And Exponent has worked on the Deep Water      8 Horizon case denying that the disaster damaged coral      9 reefs, claiming the so-called natural oil seeps were      10 the cause of the damage to the reefs; isn't that      11 true?      12 MR. HILL: Object to the form.      13 THE WITNESS: Again, not really what I've      14 worked on in the past. That's not my area of      15 expertise. So I'm not aware of everything that      16 Exponent's ever worked on in the entire history of      17 the company.      18 BY MS. CANNELLA:      19 Q. My question for you is about specifically      20 not every project that Exponent has worked on it's      21 about the Deep Water Horizon case. Are you aware of      22 Exponent's position in that case that the Deep Water      23 Horizon did not cause damage to the coral reefs, and      24 instead, it was caused by natural oil seeps?      25 MR. HILL: Object to the form.</p>
<p>Page 11</p> <p>1 history of every project and case that Exponent's      2 worked on over the years.      3 MS. CANNELLA: Move to strike as      4 nonresponsive.      5 Q. Did Exxon -- did -- did Exponent work for      6 Exxon in the Valdez oil spill case?      7 A. So I'm not aware of every project that      8 Exponent's worked on over the years so I don't know      9 if they've testified on behalf of any particular      10 client or not, whether Exxon or anyone else.      11 Q. And Exxon -- excuse me, sorry, Exponent has      12 testified on behalf of corporations in all kind of      13 pollution cases as well, correct?      14 MR. HILL: Object to the form.      15 Go ahead.      16 THE WITNESS: Again, I don't know of every      17 company that Exponent's ever worked for. I'm not      18 involved in every single project that Exponent works      19 on, so I don't know which industries they've --      20 they've worked in. I know we have consultants who      21 work across all sorts of different industries, could      22 easily have testified on pollution cases, energy      23 cases, so I'm sure there's documentation out there      24 that -- that would verify who Exponent has worked for      25 in the past. I'm just not personally aware of every</p>	<p>Page 13</p> <p>1 THE WITNESS: No, I'm not aware of      2 Exponent's testimony in that case.      3 BY MS. CANNELLA:      4 Q. Okay. And are you aware that Exponent has      5 testified on behalf of cigarette manufacturers in      6 tobacco cases?      7 MR. HILL: Same objection.      8 THE WITNESS: Similar answer to before. I      9 don't know the full history of the company and what      10 everyone else has testified about.      11 BY MS. CANNELLA:      12 Q. Do you know the fact that Exponent has      13 worked on behalf of cigarette manufacturers to defend      14 them in tobacco cases?      15 Do you know that specific fact?      16 MR. HILL: Object to the form.      17 Go ahead.      18 THE WITNESS: I'm not aware of that --      19 those clients or those specific facts that they've      20 talked about.      21 BY MS. CANNELLA:      22 Q. I'm not asking if you know the specific      23 facts they talked about, I'm asking if you knew that      24 Exponent had worked on behalf of cigarette      25 manufacturers in tobacco cases?</p>

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1       MR. HILL: Same objection. 2       THE WITNESS: I did not. 3    BY MS. CANNELLA: 4       Q. Okay. I'm going to -- let me ask you 5 first, do you know a gentleman named Mr. Croteau that 6 works at Exponent? 7       A. Yes. 8       Q. Okay. And he's the head of their 9 automobile division; is that correct? 10      A. He's the vehicle engineering practice 11 director, that's correct, pronounced "Croteau." 12      Q. Croteau. Thank you. 13       I'm going to hand you what I've marked as 14 Plaintiffs' Exhibit 104. 15       (Marked for identification Exhibit 104.) 16      MR. HILL: Go ahead. We didn't state this, 17 but obviously I reserve all objections regarding the 18 admissibility of these exhibits. That goes without 19 saying, but I'll just put it on the record. 20    BY MS. CANNELLA: 21      Q. Okay. And if you would go to page 50, 22 please, at line 6. 23      A. Okay. 24      Q. Mr. Croteau testifies that Exponent has 25 defended lawsuits for tobacco companies; is that	1       Q. And the chemical industry? 2       MR. HILL: Same objection. 3       THE WITNESS: Yes. 4    BY MS. CANNELLA: 5       Q. And when European regulatory authorities 6 banned a pesticide because it was killing bees, 7 Exponent did studies claiming that it wasn't? 8       MR. HILL: Same objection. 9    BY MS. CANNELLA: 10      Q. Are you aware of that? 11      A. I'm not. 12      Q. Okay. Exponent has defended the petroleum 13 industry as well, correct? 14      A. Yes. 15      Q. And Exponent has defended nearly every auto 16 manufacturer there is. 17       Do you agree with that? 18       MR. HILL: Object to the form. 19       Go ahead. 20      THE WITNESS: We have worked for them, yes. 21    BY MS. CANNELLA: 22      Q. And General Motors, when it was accused of 23 making defective pickup trucks because the gas tank 24 was outside the frame rails, Exponent also defended 25 GM in those cases, correct?
1       correct? 2       MR. HILL: Object to the form. 3       Go ahead. 4       THE WITNESS: Give me a moment to look 5 through it. 6       MS. CANNELLA: Yes, sir. 7       THE WITNESS: Okay. I'm sorry, what was 8 your question? 9    BY MS. CANNELLA: 10      Q. Mr. Croteau -- 11      A. Croteau. 12      Q. -- Croteau testified that Exponent has 13 defended cigarette manufacturers in litigation, 14 correct? 15      MR. HILL: Same objection. 16      THE WITNESS: Yes, that was his testimony. 17    BY MS. CANNELLA: 18      Q. All right. Do you have any reason to 19 disagree with him? 20      A. No. 21      Q. And has Exponent worked to defend the 22 asbestos industry in litigation? 23      MR. HILL: Object to the form. 24      THE WITNESS: It appears so, yes. 25    BY MS. CANNELLA:	1       MR. HILL: Object to the form. 2       THE WITNESS: I believe we did some work in 3 those projects, yes. 4    BY MS. CANNELLA: 5       Q. Okay. And every rollover-prone vehicle 6 ever sold in this country has hired Exponent to 7 defend it as well, correct? 8       MR. HILL: Object to the form. 9       THE WITNESS: I can't say every single 10 company or every single rollover, but we've been 11 hired to reconstruct and work on numerous cases, 12 including rollover projects, yes. 13    BY MS. CANNELLA: 14      Q. On behalf of auto manufacturers, correct? 15      A. Yes. 16      MR. HILL: Object to the form. 17      Go ahead. 18    BY MS. CANNELLA: 19      Q. And Exponent has been hired by Toyota in 20 the unintended acceleration cases, correct? 21      MR. HILL: Object to the form. 22      THE WITNESS: Yes. 23    BY MS. CANNELLA: 24      Q. And Exponent has been hired by GM to defend 25 it in the ignition switch cases, correct?

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1	MR. HILL: Same objection.	1	with shoulder belts, claiming they make no measurable
2	THE WITNESS: Yes.	2	difference in reducing injuries or death?
3	BY MS. CANNELLA:	3	MR. HILL: Object to the form.
4	Q. And isn't it true that General Motors pled	4	Go ahead.
5	guilty to criminal offenses in the ignition switch	5	THE WITNESS: I'm not aware of that.
6	case, but Exponent's testifiers defended the design	6	MS. CANNELLA: Okay. I'm going to show you
7	for General Motors in those cases?	7	what I've marked as Plaintiffs' Exhibit 106.
8	MR. HILL: Object to the form.	8	THE WITNESS: I would have been 10 years
9	Go ahead.	9	old in 1992.
10	THE WITNESS: I don't know the specifics of	10	(Marked for identification Exhibit 106.)
11	any of the outcomes for that project or what happened	11	BY MS. CANNELLA:
12	in public in the criminal cases, so I can't answer	12	Q. If you can turn with me to page 16, please.
13	yes or no to that question.	13	And if you'll look at the highlighted sentence with
14	BY MS. CANNELLA:	14	me, it says, "In 1992, while helping defend a lawsuit
15	Q. Are you aware that General Motors pled	15	involving a catastrophic injury to a backseat
16	guilty to a criminal offense in the ignition switch	16	passenger, Failure Analysis engineers published a
17	cases?	17	paper challenging the value of shoulder belts,
18	MR. HILL: Same objection.	18	claiming they appeared to make no, 'measurable
19	THE WITNESS: I was not.	19	difference,' in reducing injuries and death."
20	BY MS. CANNELLA:	20	Did I read that correctly?
21	Q. Isn't it true that Exponent handles over	21	A. Yes.
22	6,000 cases a year?	22	MR. HILL: Object to the form.
23	MR. HILL: Object to the form.	23	But go ahead.
24	Go ahead.	24	BY MS. CANNELLA:
25	THE WITNESS: That would be my	25	Q. And this is an article from Business
	Page 19		Page 21
1	understanding, yes.	1	Ethics, correct?
2	BY MS. CANNELLA:	2	MR. HILL: Same objection.
3	Q. And isn't it true that Exponent never	3	Can I have a standing objection regarding
4	represents a plaintiff against one of the industries	4	the form regarding all the questions relating to
5	it defends?	5	these exhibits?
6	MR. HILL: Object to the form.	6	MS. CANNELLA: I'd like to fix them if
7	Go ahead.	7	there's a form objection. I understand --
8	THE WITNESS: We do quite a bit of	8	MR. HILL: I'll make the objection to each
9	plaintiffs' work as well, so whether -- I don't know	9	question.
10	exactly who the opposing entities are, but we do a	10	BY MS. CANNELLA:
11	mixture of plaintiffs' work, defense work, insurance	11	Q. Isn't it true that when General Motors C/K
12	work. So we get contacted by a lot of different	12	pickup trucks were discovered to be prone to catching
13	companies, a lot of different entities, a lot of	13	on fire in crashes, Exponent produced a report that
14	different parties to do work on their behalf.	14	found they were actually safer than trucks that
15	BY MS. CANNELLA:	15	weren't susceptible to catching on fire?
16	Q. Well, isn't it true that Exponent has never	16	MR. HILL: Object to the form.
17	sent one of its witnesses to testify for an	17	THE WITNESS: I'm not aware of that --
18	individual against an auto manufacturer?	18	those findings.
19	MR. HILL: Object to the form.	19	BY MS. CANNELLA:
20	THE WITNESS: I don't know the full history	20	Q. Okay. Okay. If you can look at that same
21	of the company, so I can't answer yes or no on that.	21	page, page 16 of Plaintiffs' Exhibit 106. The
22	BY MS. CANNELLA:	22	second -- second-to-last paragraph that starts "that
23	Q. Are you aware that in 1992, FAA, the former	23	same year," if you look at that second sentence in
24	Exponent, published an article for automakers	24	that paragraph, please. "Although hundreds of people
25	challenging the value of shoulder belts, seatbelts	25	had survived crashes of the pickups only to be burned

<p style="text-align: right;">Page 22</p> <p>1 to death in resulting fires, Failure Analysis      2 produced a report showing lower overall death rates      3 in crashes of the GM trucks than for competing Ford      4 and Dodge models. In fact, the fatality risk of the      5 GM trucks was somewhat higher than that of their      6 full-sized rival."</p> <p>7 Did I read that correctly?</p> <p>8 MR. HILL: Object to the form.</p> <p>9 THE WITNESS: Yes.</p> <p>10 BY MS. CANNELLA:</p> <p>11 Q. Okay. Gas tanks that are located -- or      12 excuse me, strike that.</p> <p>13 Gas tanks are located inside frame rails so      14 that they're protected from crush in crashes; isn't      15 that right?</p> <p>16 MR. HILL: Object to the form.</p> <p>17 THE WITNESS: Not necessarily.</p> <p>18 BY MS. CANNELLA:</p> <p>19 Q. That's how most designs in passenger cars      20 are, correct?</p> <p>21 MR. HILL: Same objection.</p> <p>22 THE WITNESS: I've seen all sorts of      23 different designs in working with vehicles over the      24 years.</p> <p>25 BY MS. CANNELLA:</p>	<p style="text-align: right;">Page 24</p> <p>1 I can't answer yes or no to that question.</p> <p>2 MS. CANNELLA: Move to strike as      3 nonresponsive.</p> <p>4 Q. Are you aware that Exponent has helped the      5 auto industry fight against regulations for vehicle      6 stability?</p> <p>7 MR. HILL: Same objection.</p> <p>8 THE WITNESS: Again, similar answers. And      9 I would disagree with your word "fight." Exponent      10 consults quite a bit with car manufacturers who work      11 with regulators to come up with regulations that are      12 in the best interests of the public to keep everybody      13 safe. So the word "fight against" is probably not      14 the best word to use. We work together with      15 regulators and with car manufacturers to try and help      16 determine what's going to be the best for -- for      17 vehicle safety.</p> <p>18 BY MS. CANNELLA:</p> <p>19 Q. So you are aware that Exponent has helped      20 the auto industry with regard to federal auto      21 regulations, correct?</p> <p>22 MR. HILL: Same objection.</p> <p>23 THE WITNESS: I know we had -- some people      24 in the company have projects where they work together      25 to do some of those things.</p>
<p style="text-align: right;">Page 23</p> <p>1 Q. You know that it's a bad idea to have a gas      2 tank outside the frame rails of a vehicle, correct?</p> <p>3 MR. HILL: Same objection.</p> <p>4 THE WITNESS: I'm not in gas tank design.      5 There's lots of different reasons to place a gas      6 tank in different places in the vehicle. One of the      7 objectives for placing a gas tank would be to keep it      8 safe. I -- I'm sure there's many ways you can do      9 that.</p> <p>10 BY MS. CANNELLA:</p> <p>11 Q. Does it surprise you that Exponent did a      12 study that found a truck with its gas tank outside      13 the frame rails to be safer than trucks with gas      14 tanks inside the frame rails?</p> <p>15 MR. HILL: Same objection.</p> <p>16 THE WITNESS: I wasn't involved in the      17 study, so I can't really comment on the results of      18 that.</p> <p>19 BY MS. CANNELLA:</p> <p>20 Q. Are you aware that Exponent has helped auto      21 industry companies fight against federal regulations?</p> <p>22 MR. HILL: Same objection.</p> <p>23 THE WITNESS: I'm not aware of everything      24 again that Exponent does every -- every day, so I've      25 not been involved in working with the regulators, so</p>	<p style="text-align: right;">Page 25</p> <p>1 BY MS. CANNELLA:</p> <p>2 Q. And Exponent, in addition to vehicle      3 manufacturers, fought against regulations for greater      4 roof strength for decades.</p> <p>5 Are you aware of that?</p> <p>6 MR. HILL: Object to the form.</p> <p>7 THE WITNESS: Again, when you use the term      8 "fight against," I'm not aware that -- which side or      9 what position we took in any work that we've been      10 doing. Again, I know we work with vehicle      11 manufacturers. We help them to test vehicles and      12 they work with the government regulators to try and      13 determine what's going to be the best for the public      14 safety.</p> <p>15 BY MS. CANNELLA:</p> <p>16 Q. Isn't it true that Exponent engineers      17 repeatedly claim that head and neck injuries to      18 occupants of vehicles with collapsed roofs were      19 caused by the occupants diving into the roof before      20 it crushed flat?</p> <p>21 MR. HILL: Object to the form.</p> <p>22 THE WITNESS: In some situations, that      23 would be true, yes.</p> <p>24 BY MS. CANNELLA:</p> <p>25 Q. And if you look with me at Plaintiffs'</p>

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<p>1 Exhibit 106, do you know Brian O'Neill, the former      2 president of the Insurance Institute for Highway      3 Safety?</p> <p>4 A. I do not.</p> <p>5 Q. Are you aware of what the Insurance      6 Institute for Highway Safety is?</p> <p>7 A. My understanding is it's a testing company      8 that runs a lot of vehicle crash testing.</p> <p>9 Q. And it's run by the insurance company,      10 correct -- insurance industry?</p> <p>11 MR. HILL: Object to the form.</p> <p>12 Go ahead.</p> <p>13 THE WITNESS: I actually don't know who      14 runs it. It's in the name, but I don't know who owns      15 the company or who is in charge of the company.</p> <p>16 BY MS. CANNELLA:</p> <p>17 Q. Are you aware that it's not beholden to the      18 auto industry or run by the auto industry?</p> <p>19 A. That's my understanding.</p> <p>20 Q. And Brian O'Neill, who was the president,      21 called the argument, according to this business      22 ethics article, "patently nonsense," correct?</p> <p>23 MR. HILL: Object to the form.</p> <p>24 THE WITNESS: Which page are you on?</p> <p>25 BY MS. CANNELLA:</p>	<p>1 THE WITNESS: I'm not aware of that.</p> <p>2 BY MS. CANNELLA:</p> <p>3 Q. Are you aware that Mr. Croteau has      4 testified under oath at trial in the U.S. District      5 Court for the Eastern District of Missouri that he      6 would never take a case against a car company,      7 because "that would be a business conflict"?</p> <p>8 MR. HILL: Object to the form.</p> <p>9 Go ahead.</p> <p>10 THE WITNESS: I'm not aware of that      11 testimony.</p> <p>12 BY MS. CANNELLA:</p> <p>13 Q. Do you agree that Exponent could not take a      14 case against a car company because that would be a      15 business conflict?</p> <p>16 MR. HILL: Object to the form.</p> <p>17 THE WITNESS: A conflict could generally      18 arise in that case, yes.</p> <p>19 BY MS. CANNELLA:</p> <p>20 Q. Have you ever heard of an Exponent employee      21 testifying against a car company?</p> <p>22 MR. HILL: Same objection.</p> <p>23 THE WITNESS: Not that I know of.</p> <p>24 BY MS. CANNELLA:</p> <p>25 Q. Do you agree that you are not the person</p>
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<p>1 Q. 20.</p> <p>2 A. I'm sorry, what was the -- what was the      3 question again?</p> <p>4 Q. The highlighted sentence there says, "Brian      5 O'Neill, former president of the Insurance Institute      6 for Highway Safety, called the argument patently      7 nonsense."</p> <p>8 Did I read that correctly?</p> <p>9 A. Yes.</p> <p>10 MR. HILL: Object to the form.</p> <p>11 BY MS. CANNELLA:</p> <p>12 Q. And that's under the title -- that's under      13 the section of the article called, "In defense of      14 weak roofs," correct?</p> <p>15 MR. HILL: Same objection.</p> <p>16 THE WITNESS: Yes.</p> <p>17 BY MS. CANNELLA:</p> <p>18 Q. Do you know Allen C. Donaldson, a former      19 Exponent employee?</p> <p>20 A. I do not.</p> <p>21 Q. Are you aware he has said to the press that      22 because he worked for Exponent he could never accept      23 a case for a plaintiff?</p> <p>24 MR. HILL: Object to the form.</p> <p>25 Go ahead.</p>	<p>1 companies usually call to testify in litigation?</p> <p>2 MR. HILL: Object to the form.</p> <p>3 Go ahead.</p> <p>4 THE WITNESS: No, I would not agree with      5 that.</p> <p>6 BY MS. CANNELLA:</p> <p>7 Q. You read the report of Dr. Gwin in this      8 case, correct?</p> <p>9 A. No, I have not.</p> <p>10 Q. You received the report, correct?</p> <p>11 A. I have not.</p> <p>12 Q. And you received her deposition?</p> <p>13 A. I have not.</p> <p>14 Q. Okay. Well, we can get into that later,      15 but Mrs. Gwin -- or, excuse me, strike that.</p> <p>16 Dr. Gwin has testified 54 times in the last      17 year. Is that consistent with the experts -- some of      18 the experts -- testifying experts that you work with      19 at Exponent?</p> <p>20 MR. HILL: Object to the form.</p> <p>21 Go ahead.</p> <p>22 THE WITNESS: I would guess so, yeah.</p> <p>23 BY MS. CANNELLA:</p> <p>24 Q. And you know Dr. Carhart, correct?</p> <p>25 A. I do.</p>

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<p>1 Q. He's an Exponent employee that works on      2 automotive cases and testifies?</p> <p>3 A. Yes.</p> <p>4 Q. The last list I saw for him, he had over      5 140 cases in which he had testified in the course of      6 10 years.</p> <p>7 Does that surprise you?</p> <p>8 MR. HILL: Object to the form.</p> <p>9 THE WITNESS: It does not.</p> <p>10 MS. CANNELLA: And Plaintiffs' Exhibit 107      11 is your testimony list that we received in this case.      12 (Marked for identification Exhibit 107.)</p> <p>13 BY MS. CANNELLA:</p> <p>14 Q. In the last 10 years you've testified nine      15 times, correct?</p> <p>16 A. That's correct.</p> <p>17 Q. So in 10 years at Exponent you've testified      18 nine times, while in 10 years Dr. Carhart has      19 testified about 10 times that much, would you agree      20 with that statement?</p> <p>21 MR. HILL: Object to the form.</p> <p>22 THE WITNESS: Yes.</p> <p>23 MS. CANNELLA: I'm going to hand you what      24 I've marked as Plaintiffs' Exhibit 108. That's your      25 report in this case that we received.</p>	<p>1 BY MS. CANNELLA:      2 Q. It's quite significantly higher than yours,      3 correct?</p> <p>4 MR. HILL: Same objection.</p> <p>5 THE WITNESS: My understanding is it is      6 higher than mine, yes.</p> <p>7 BY MS. CANNELLA:</p> <p>8 Q. You're not offering an opinion in this case      9 regarding whether or not the lift kit is defective;      10 is that right?</p> <p>11 A. That's correct.</p> <p>12 Q. You know a gentleman named Bob Lang at      13 Exponent, correct?</p> <p>14 A. I know the name, yes.</p> <p>15 Q. And he's a former General Motors employee,      16 are you aware of that?</p> <p>17 A. I believe so, yes.</p> <p>18 Q. And he works for Exponent now?</p> <p>19 A. Yes.</p> <p>20 Q. Would it be fair to characterize Mr. Lang      21 as the grandfather of automotive expert testifiers?</p> <p>22 MR. HILL: Object to the form.</p> <p>23 Go ahead.</p> <p>24 THE WITNESS: I don't know that I could      25 characterize him as that.</p>
<p>1 (Marked for identification Exhibit 108.)</p> <p>2 BY MS. CANNELLA:</p> <p>3 Q. And in this it says that your billing rate      4 is \$335 an hour in 2024 and 310 hours [sic] in 2023;      5 is that correct?</p> <p>6 MR. HILL: Object to the form.</p> <p>7 Go ahead.</p> <p>8 THE WITNESS: That's correct.</p> <p>9 BY MS. CANNELLA:</p> <p>10 Q. And do you agree that your rate is      11 relatively low for an Exponent employee in the      12 automotive field?</p> <p>13 MR. HILL: Object to the form.</p> <p>14 THE WITNESS: It's probably about average.</p> <p>15 BY MS. CANNELLA:</p> <p>16 Q. Dr. Carhart, does he testify about \$310 an      17 hour?</p> <p>18 A. He does not.</p> <p>19 MR. HILL: Object to the form.</p> <p>20 Go ahead.</p> <p>21 BY MS. CANNELLA:</p> <p>22 Q. Is he closer to a thousand dollars an hour?</p> <p>23 MR. HILL: Same objection.</p> <p>24 THE WITNESS: I don't know what his bill      25 rate is.</p>	<p>1 BY MS. CANNELLA:      2 Q. He's been around since -- for decades,      3 would you agree with that?</p> <p>4 A. He's a lot older than I am.</p> <p>5 Q. Yes. And he's been testifying for a long      6 time, correct?</p> <p>7 A. That would be my understanding, yeah.</p> <p>8 Q. Is he a mentor to you or has he trained you      9 at all?</p> <p>10 A. He has not.</p> <p>11 Q. He became a testifying expert after leaving      12 a career at General Motors, do you agree with that?</p> <p>13 MR. HILL: Object to the form.</p> <p>14 But go ahead.</p> <p>15 THE WITNESS: I believe that's his      16 background, yes.</p> <p>17 BY MS. CANNELLA:</p> <p>18 Q. And he has helped to defend numerous      19 General Motors products, do you agree?</p> <p>20 MR. HILL: Same objection.</p> <p>21 THE WITNESS: I don't know what his typical      22 project or workload is.</p> <p>23 BY MS. CANNELLA:</p> <p>24 Q. Okay. Are you aware that he helped defend      25 the C/K side saddle pickup trucks?</p>

<p>1        MR. HILL: Same objection.      2        THE WITNESS: I am not.      3    BY MS. CANNELLA:      4        Q. Are you aware that when he was at General      5    Motors, he worked on analyzing the voluntary      6    compatibility agreement?      7        MR. HILL: Same objection.      8        THE WITNESS: I'm not aware of that.      9    BY MS. CANNELLA:      10      Q. And you know the voluntary compatibility      11    agreement is the agreement that major auto      12    manufacturers entered into to keep their bumpers      13    within a certain range in order to increase crash      14    compatibility --      15        MR. HILL: Object to the form.      16    BY MS. CANNELLA:      17        Q. -- correct?      18        A. I'm not familiar with that, no.      19        Q. Okay. Are you aware that Mr. Lang      20    advocated to use a secondary energy absorption device      21    to make people like the Brysons safer in crashes?      22        MR. HILL: Object to the form.      23        THE WITNESS: I'm not aware of that.      24    BY MS. CANNELLA:      25        Q. In your opinion, does Mr. Lang know what</p>	<p>Page 34</p> <p>1        shown that the effectiveness in the studied cases is      2    to reduce the calculated intrusion in the smaller      3    vehicle."      4        Did I read that correctly?      5        MR. HILL: Object to the form.      6        Go ahead.      7        THE WITNESS: Yes.      8    BY MS. CANNELLA:      9        Q. Do you agree that the secondary energy      10    absorption structure, the SEAS, is effective at      11    reducing crush in an occupant space?      12        MR. HILL: Object to form.      13        THE WITNESS: I haven't analyzed it, so I      14    couldn't answer that question.      15    BY MS. CANNELLA:      16        Q. Did Exponent make any determination      17    regarding whether adding a lift kit increases the      18    danger to people in a crash?      19        MR. HILL: Object to the form.      20        THE WITNESS: I did not.      21    BY MS. CANNELLA:      22        Q. Did Exponent?      23        MR. HILL: Same objection.      24        THE WITNESS: Not that I'm aware of.      25    BY MS. CANNELLA:</p>
<p>1        he's talking about when it comes to vehicle      2    compatibility?      3        MR. HILL: Same objection.      4        THE WITNESS: I would assume so.      5    BY MS. CANNELLA:      6        Q. Are you aware that Mr. Lang has written a      7    paper finding evidence that the secondary energy      8    absorption structure, or the SEAS, is effective at      9    reducing crush and reducing occupant injuries?      10        MR. HILL: Object to the form.      11        THE WITNESS: I am not aware of that.      12        MS. CANNELLA: I'm going to hand you what      13    I've marked as Plaintiffs' Exhibit 109.      14        (Marked for identification Exhibit 109.)      15    BY MS. CANNELLA:      16        Q. Can you turn to the first written text      17    page, if you flip that first page over.      18        A. Yeah, give me one -- give me one moment.      19    You said page 1?      20        Q. That first written page with the      21    highlighting on it.      22        Okay. Mr. Lang's paper says, "The addition      23    of" second -- "of a secondary structure to light      24    trucks and vans for the purpose of increasing      25    structural interaction is also investigated and is</p>	<p>Page 35</p> <p>1        Q. Did Exponent suggest any way to make the      2    lift safer to Rough Country?      3        MR. HILL: Object to the form.      4        THE WITNESS: Not that I'm aware of.      5    BY MS. CANNELLA:      6        Q. Did Rough Country ask Exponent to analyze      7    how to make the lift kit safer to avoid future      8    injuries?      9        MR. HILL: Object to form.      10        THE WITNESS: Not that I'm aware of.      11    BY MS. CANNELLA:      12        Q. How many lawyer engineering conferences did      13    you attend?      14        A. For this particular case?      15        Q. Yes, sir.      16        A. Two or three. It's probably reflected in      17    my invoices that we sent out with the timesheets.      18        Q. And did you make any notes at any of those      19    lawyer engineering conferences?      20        A. Any notes I would have made would have      21    likely been based on the parameters that we have for      22    the crash testing and all of those would have been      23    transcribed and included in my test report.      24        Q. Did you do a presentation at the lawyer      25    engineering conference?</p>

<p style="text-align: right;">Page 38</p> <p>1 A. I did not.      2 Q. Did anyone else?      3 A. Not that I remember.      4 Q. Do Exponent employees communicate      5 internally via instant messaging?      6 A. Yes.      7 Q. Okay. And they use chatting, Slack, Teams,      8 what kind of software do they use?      9 A. We've had several across the years. We      10 used, several years ago, a Cisco product. I can't      11 remember what it was called. We're currently using      12 Microsoft Teams.      13 Q. Do you know an Exponent employee who does      14 IT, named Jim Dewell?      15 A. The name sounds familiar. Probably gets      16 e-mails from him.      17 Q. Has he or anyone else ever told you about      18 an app called Greenshot?      19 A. No.      20 Q. Have you ever used it, Greenshot?      21 A. No.      22 Q. Have you ever told anyone to take      23 screenshots during a LEC, but not to save them to the      24 file?      25 A. No.</p>	<p style="text-align: right;">Page 40</p> <p>1 people interact with those.      2 Q. Do you know an engineer named Dr. Shane      3 Davis?      4 A. Yeah. Why is that name familiar? I      5 believe he worked at Exponent kind of right as I was      6 starting, maybe a decade ago.      7 Q. All right. Plaintiffs' Exhibit 110, I'll      8 represent to you, has been produced to us from      9 Exponent in a different case, and it's a string of      10 text messages or instant messages between Dr. Davis      11 and Dr. Cades.      12 Do you see that?      13 A. Yes.      14 Q. Okay. If you can turn with me to the      15 second page. In the highlighted area, Dr. Cades      16 says, this is in advance of a LEC, lawyer engineering      17 conference, "Also for this meeting you know how to      18 take screenshots and notes of the slides that others      19 present," Dr. Cade says, and there's some unrelated      20 discussion about Dr. Davis's computer and -- and      21 family. And then Dr. Davis says, "I am prepared to      22 take notes during the meeting. I will take      23 screenshots as well. I usually use the print screen      24 key." And then on the next page Dr. Cades says,      25 "There's an app that Jim told me about called</p>
<p style="text-align: right;">Page 39</p> <p>1 Q. Have -- has anyone ever told you to do      2 that?      3 A. No.      4 Q. Have you ever done that?      5 A. I've taken screenshots of presentations      6 before, and I keep them with my file material if I      7 do.      8 Q. Okay. And does that exist in this case?      9 A. No.      10 MS. CANNELLA: I'm going to show you      11 Plaintiffs' Exhibit 110.      12 (Marked for identification Exhibit 110.)      13 BY MS. CANNELLA:      14 Q. Do you know a gentleman named Dr. Cades at      15 Exponent?      16 A. I do.      17 Q. And he works in the vehicle team?      18 A. He's actually in our human factors      19 practice, so I believe his background is in human      20 psychology, interacting -- he does different stuff      21 than what I do.      22 Q. So he does -- but he does like warnings for      23 cars and that kind of thing?      24 A. I think part of his stuff he does look at      25 warnings and labels and -- and those things and how</p>	<p style="text-align: right;">Page 41</p> <p>1 Greenshot for screenshots that's really nice."      2 One moment. Oh, if you'll back up with me      3 to page 3, please. After Dr. Cades says, "For this      4 meeting you know how to take screenshots and notes of      5 the slides that others present." He then says, "And      6 then e-mail those to Christian," in all caps, "do      7 not," end all caps, "save them in the project file."      8 Did I read that correctly?      9 MR. HILL: Object to the form.      10 Go ahead.      11 THE WITNESS: Which page are you on?      12 BY MS. CANNELLA:      13 Q. I'm sorry, let me start again.      14 On Plaintiffs' Exhibit 110, this is an      15 exchange between Dr. Davis at Exponent and Dr. Cades      16 at Exponent and on page 2 with the highlighting --      17 highlighted messages Dr. Cades says, "Also for this      18 meeting you know how to take screenshots and notes of      19 the slides that others present." And then on the      20 next page, "And then e-mail those to Christian," in      21 all caps, "do not," end caps, "save them in the      22 project file."      23 Did I read that correctly?      24 MR. HILL: Object to the form.      25 THE WITNESS: Yes.</p>

<p style="text-align: right;">Page 42</p> <p>1 BY MS. CANNELLA:      2 Q. Okay. And then on the last page of      3 Plaintiffs' Exhibit 106 -- or 110, I'm sorry, the      4 second-to-last message Dr. Davis says, "Going to      5 clean up my notes and send to Christian this      6 evening," and Dr. Cades says, "Thanks, Shane,"      7 correct?      8 MR. HILL: Object.      9 BY MS. CANNELLA:      10 Q. Did I read that correctly?      11 MR. HILL: Object to the form.      12 THE WITNESS: Yes.      13 BY MS. CANNELLA:      14 Q. Okay. Did you ever hear anything about      15 this at Exponent --      16 MR. HILL: Same objection.      17 BY MS. CANNELLA:      18 Q. -- this incident?      19 MR. HILL: You're talking about -- what      20 incident?      21 MS. CANNELLA: This incident reflected in      22 Exhibit 110, where Dr. Cades at Exponent told      23 Dr. Davis at Exponent to take screenshots of a lawyer      24 engineering conference and do not save them to the      25 file.</p>	<p style="text-align: right;">Page 44</p> <p>1 THE WITNESS: Yes.      2 BY MS. CANNELLA:      3 Q. It's run thousands of crash tests with      4 crash test dummies in them.      5 Do you agree with that?      6 A. Yes.      7 Q. Does Exponent own crash test dummies or      8 ATDs, as they're called, or does it rent them?      9 A. We own -- we own some of them and we rent      10 some of them, depending on the project.      11 Q. Does Exponent own child dummies?      12 A. We do.      13 Q. Does Exponent own 5 percent female dummies?      14 A. We do.      15 Q. Have you run -- personally run crash tests      16 with dummies in them?      17 A. I have.      18 Q. Have you run crash tests with instrumented      19 dummies in them?      20 A. Yes.      21 Q. In the cars? Okay.      22 And what do you do if the dummy is a number      23 of fewer pounds than the person in the crash?      24 A. Depending on the parameters requested, we      25 can either lighten the dummy up or we can add ballast</p>
<p style="text-align: right;">Page 43</p> <p>1 MR. HILL: Object to the form.      2 THE WITNESS: I did not hear about it, no.      3 BY MS. CANNELLA:      4 Q. So did Exponent do a companywide training      5 for employees on not hiding evidence after this      6 happened in August of 2022?      7 MR. HILL: Object to the form.      8 THE WITNESS: No.      9 BY MS. CANNELLA:      10 Q. Did Exponent send an e-mail to everyone and      11 tell them do not do anything like this?      12 MR. HILL: Same objection.      13 THE WITNESS: No.      14 BY MS. CANNELLA:      15 Q. Is this kind of thing condoned at Exponent?      16 MR. HILL: Object to the form.      17 THE WITNESS: I personally don't do that,      18 so I can't speak for everyone else at Exponent.      19 BY MS. CANNELLA:      20 Q. Do you agree that Exponent has run crash      21 tests with crash test dummies in them?      22 A. Yes.      23 Q. And do you agree that Exponent has run lots      24 of crash tests with crash test dummies in them?      25 MR. HILL: Object to the form.</p>	<p style="text-align: right;">Page 45</p> <p>1 weight and make the dummy heavier.      2 Q. And did anyone ask you to put dummies in      3 the Escape for the crash test you did in this case?      4 A. They did not.      5 MS. CANNELLA: Can you let Devin in the      6 wait -- or out of the waiting room.      7 THE VIDEOGRAPHER: Oh, is he in there?      8 MS. CANNELLA: Yeah.      9 THE VIDEOGRAPHER: Can we go off the record      10 for a moment? I don't know. I don't have it on my      11 side. Let me see.      12 MS. CANNELLA: Okay.      13 THE VIDEOGRAPHER: I didn't see it in      14 there. I don't have it on my computer. She's got      15 it. Let's go off the record, if that's okay.      16 MS. CANNELLA: Yeah, that's fine.      17 THE VIDEOGRAPHER: Okay. We're going off      18 the record. The time is 9:49.      19 (Recessed from 9:49 a.m. until 9:52 a.m.)      20 THE VIDEOGRAPHER: We're back on the      21 record. The time is 9:52.      22 BY MS. CANNELLA:      23 Q. Okay. Mr. Crosby, Wesley Grimes and      24 Dr. Lisa Gwin have both testified in this case. Are      25 you going to refute anything that they are going to</p>

<p>1 testify about?</p> <p>2 A. No.</p> <p>3 MR. HILL: Object to the form.</p> <p>4 But go ahead.</p> <p>5 THE WITNESS: No.</p> <p>6 MS. CANNELLA: I'm going to hand you what</p> <p>7 I've marked as Plaintiffs' Exhibit 111, and I'll just</p> <p>8 tell you now, this is a document I created, so keep</p> <p>9 that in mind.</p> <p>10 MR. HILL: It's 111?</p> <p>11 MS. CANNELLA: Yes, sir. And I do have an</p> <p>12 extra one of that.</p> <p>13 (Marked for identification Exhibit 111.)</p> <p>14 BY MS. CANNELLA:</p> <p>15 Q. Okay. This is a picture of the crash test</p> <p>16 Escape, the rear of it. And then I've taken the Ford</p> <p>17 front of the F250 from the crash test and inverted it</p> <p>18 for a mirror image.</p> <p>19 Do you see that, above it?</p> <p>20 A. Yes.</p> <p>21 Q. Okay. And what I want to ask you about is</p> <p>22 whether you see the Ford cursive on -- from the F250</p> <p>23 right above the Escape label. Can you see that</p> <p>24 there? There's a -- it's the D and it's a loop,</p> <p>25 there's a loop there. And then the D, stem of the D</p>	<p>Page 46</p> <p>1 A. I told him I would have to go look at it,</p> <p>2 and get back to him. I went out and took a look at</p> <p>3 the crash test vehicles, and it appeared to me that</p> <p>4 the alignment was generally about what we lined up,</p> <p>5 it could have shifted maybe an inch or two, from what</p> <p>6 we had initially set up.</p> <p>7 Q. Okay. And you initially set up what</p> <p>8 alignment?</p> <p>9 A. If you look at my test report there's a</p> <p>10 diagram in the test report, I'm going to take a look</p> <p>11 at it so I can get you the right number here. In my</p> <p>12 test report I've got 10.9 inches of offset.</p> <p>13 Q. And how many inches of offset did you have</p> <p>14 in reality?</p> <p>15 A. I haven't measured it exactly, but just</p> <p>16 some quick estimations looks like maybe closer to</p> <p>17 12 inches.</p> <p>18 Q. And how did you make that estimation?</p> <p>19 A. If you look at this Ford emblem where it</p> <p>20 shows up here, in fact, on this picture that you've</p> <p>21 got and you kind of line up that D with the Ford</p> <p>22 Escape, and you make some estimates of where the</p> <p>23 center line of the vehicle is, relative to where the</p> <p>24 Escape emblem is and then relative to where the Ford</p> <p>25 emblem imprinted on that, you can measure</p>
<p>1 and right before that there's the loop of the R.</p> <p>2 Do you recognize that?</p> <p>3 MR. HILL: Object to the form.</p> <p>4 But go ahead.</p> <p>5 THE WITNESS: I do.</p> <p>6 BY MS. CANNELLA:</p> <p>7 Q. Okay. Did anyone ask you to look at this</p> <p>8 evidence after the Grimes deposition?</p> <p>9 MR. HILL: Object to the form. What is</p> <p>10 "this evidence"?</p> <p>11 BY MS. CANNELLA:</p> <p>12 Q. Did anyone ask you to look at evidence of</p> <p>13 the Ford emblem on the back of the Escape after</p> <p>14 Wesley Grimes was deposed?</p> <p>15 A. Not specifically.</p> <p>16 Q. Okay. How about generally?</p> <p>17 A. After -- I believe it was after his</p> <p>18 deposition, Wes called me up, had a couple of</p> <p>19 questions about the crash testing, one of which was</p> <p>20 the general alignment for the Ford -- or they're both</p> <p>21 Fords -- for the F250 into the back of the Escape.</p> <p>22 Q. Okay. And what was his question?</p> <p>23 A. He was just asking what -- what ended up</p> <p>24 being the actual crash test alignment.</p> <p>25 Q. And what did you tell him?</p>	<p>Page 47</p> <p>1 approximately an inch or two more than that 10.9</p> <p>2 inches, which puts you right at 12, 12 1/2 inches or</p> <p>3 so.</p> <p>4 Q. Okay. And did you do this with, like, a</p> <p>5 measuring tape or with computer analysis or eyeball</p> <p>6 it, how did you figure this out?</p> <p>7 A. I went out there and took a quick tape</p> <p>8 measure and just did some quick estimates on</p> <p>9 approximately where things were.</p> <p>10 Q. Okay. If you wanted to drill down to</p> <p>11 specifics, what would you do?</p> <p>12 A. I'd have to look at -- probably look at</p> <p>13 some scan data, either pre-test scan data, post-test</p> <p>14 scan data or get some models of some vehicles and</p> <p>15 really figure out exactly where this is, and line up</p> <p>16 the Ford emblem with that and then see what that</p> <p>17 overall alignment would be.</p> <p>18 Q. But you have not done that yet, correct?</p> <p>19 A. I have not done that, no.</p> <p>20 Q. Are you going to do that?</p> <p>21 A. I'm not planning on it, no.</p> <p>22 Q. Okay. The -- strike that, I'm sorry.</p> <p>23 Would you characterize the crash test that</p> <p>24 you did as an override crash?</p> <p>25 A. Looking at the video there appeared to be</p>

13 (Pages 46 - 49)

<p style="text-align: right;">Page 50</p> <p>1 some override components of the crash test that we      2 ended up running, yes.</p> <p>3 Q. Okay. So would you -- would you call it an      4 override?</p> <p>5 A. Yes.</p> <p>6 Q. Okay. And why?</p> <p>7 A. When you look at the rear structure of the      8 Escape and the front structure of the Ford and you      9 watch the crash test video, it looks like the bumper      10 of the F250 -- sorry, I keep using "Ford," when      11 they're both Fords -- the front bumper of the F250      12 went above the rear bumper of the Ford Escape.</p> <p>13 Q. So they were lined up before the crash and      14 they overlapped, correct?</p> <p>15 A. I don't know the exact height of the      16 bumper, I've got some photographs of that vertical      17 alignment.</p> <p>18 Q. Okay.</p> <p>19 A. Sitting here I don't remember exactly what      20 they were.</p> <p>21 Q. Yes, you can take a look at your      22 photographs to answer the question, and the question      23 is before the crash the bumpers overlapped each      24 other?</p> <p>25 A. I'm looking at picture 263 from my test</p>	<p style="text-align: right;">Page 52</p> <p>1 A. Our Phoenix office is where our vehicle      2 crash testing happens.</p> <p>3 Q. All of them?</p> <p>4 A. Yes.</p> <p>5 Q. And does Exponent have sled test sites?</p> <p>6 A. Yes.</p> <p>7 Q. And where are those?</p> <p>8 A. Also in Phoenix.</p> <p>9 Q. All of them?</p> <p>10 A. We just have the one.</p> <p>11 Q. Okay. Does Exponent do what's called      12 static testing of automotive parts, like seat      13 stability or roof crush testing?</p> <p>14 A. Yes.</p> <p>15 Q. And do those happen at Phoenix as well?</p> <p>16 A. Yes.</p> <p>17 Q. How many crash tests does Exponent run in a      18 year?</p> <p>19 A. That's a great question. I would estimate      20 we run well over 100 crash tests in a year.</p> <p>21 Q. And how many crash tests are you involved      22 in in a year?</p> <p>23 A. I'm probably involved in 25 to 50 percent      24 of those.</p> <p>25 Q. How far down the line did planning for the</p>
<p style="text-align: right;">Page 51</p> <p>1 report and it looks like there are portions of the      2 two bumpers that align and there are also portions of      3 the F250 bumper that are above the bumper structure      4 of the Escape.</p> <p>5 Q. So it's your testimony that Ford      6 manufactured the F250 and the Escape and these were      7 run as factory production vehicles, correct, just as      8 Ford made them?</p> <p>9 A. That's correct.</p> <p>10 Q. So Ford manufactured these two vehicles      11 that in a crash with each other the F250 would      12 override the Escape, correct?</p> <p>13 A. In this particular set of circumstances,      14 portions of the F250 bumper overrode the bumper of      15 the Escape.</p> <p>16 Q. Did Exponent tell Ford that the F250 is      17 overriding the Ford Escape?</p> <p>18 MR. HILL: Object to the form.</p> <p>19 Go ahead.</p> <p>20 THE WITNESS: I did not.</p> <p>21 BY MS. CANNELLA:</p> <p>22 Q. Okay. How many crash testing sites does      23 Exponent have?</p> <p>24 A. For vehicle crash testing?</p> <p>25 Q. Yes, sir.</p>	<p style="text-align: right;">Page 53</p> <p>1 second crash test go?</p> <p>2 MR. HILL: Object to the form.</p> <p>3 THE WITNESS: So the second crash test,      4 those vehicles were prepped in the exact same manner      5 as the first one. So as far as how far down the line      6 we got in that prep, we were following the same      7 blueprint as the first ones. We were ready to swap      8 out any instrumentation and our tow equipment and      9 everything else that was on the first set of      10 vehicles.</p> <p>11 BY MS. CANNELLA:</p> <p>12 Q. Okay. So all the instrumentation you see      13 in the vehicles and the crash test in your report,      14 that was done to all the -- to the other two vehicles      15 that were purchased but not crashed?</p> <p>16 A. The mounts for that instrumentation was      17 installed.</p> <p>18 Q. And the -- Mr. Grimes testified that larger      19 tires were purchased for the F250 that would be      20 used -- could only be used with a lift.</p> <p>21 Are you aware of those tires and wheels      22 being purchased?</p> <p>23 A. Yes.</p> <p>24 Q. And were those going to be put on the      25 second F250?</p>

<p style="text-align: right;">Page 54</p> <p>1 A. Not that I know of.</p> <p>2 Q. All right. And so what was the second</p> <p>3 crash test going to consist of?</p> <p>4 A. My understanding with the discussions we</p> <p>5 had with everyone was the second crash test was going</p> <p>6 to be identical to the first, in case we had any</p> <p>7 issues with the first one.</p> <p>8 Q. Okay. So no parameters were going to</p> <p>9 change in the second crash test?</p> <p>10 A. Not that I'm aware of.</p> <p>11 Q. And how often do you buy a second set of</p> <p>12 vehicles for a crash test in case the first set</p> <p>13 doesn't -- something goes wrong in the first crash</p> <p>14 test?</p> <p>15 A. It's -- we do that occasionally. It</p> <p>16 typically depends on the project and timing and</p> <p>17 deadlines.</p> <p>18 Q. Okay. Was there some deadline in this case</p> <p>19 that was a concern?</p> <p>20 A. I don't remember if there was a deadline.</p> <p>21 I was just told that we had a very small window to</p> <p>22 run the tests in, and if I recall last year our test</p> <p>23 facility was incredibly busy, and so if we needed to</p> <p>24 run a second test we MAY have been two, three,</p> <p>25 four months out to get a second test scheduled.</p>	<p style="text-align: right;">Page 56</p> <p>1 days in that instance where you don't need the second</p> <p>2 day, but you're reserving it?</p> <p>3 A. So we don't charge per day, we just charge</p> <p>4 per test. So if we had run the second test, we would</p> <p>5 have charged for the second test. In this case we</p> <p>6 did not, so we didn't charge the full amount for the</p> <p>7 second test.</p> <p>8 Q. How much would the second test have been?</p> <p>9 A. I believe it's in the invoices there.</p> <p>10 There's a line item for both the tests -- both tests</p> <p>11 to -- to be executed.</p> <p>12 MS. CANNELLA: And I'll hand you what I</p> <p>13 marked as Plaintiffs' Exhibit Number 123, which is</p> <p>14 your invoices.</p> <p>15 (Marked for identification Exhibit 123.)</p> <p>16 BY MS. CANNELLA:</p> <p>17 Q. If you can take a look and see if you see</p> <p>18 that answer in there, that would be helpful.</p> <p>19 A. Yes, we have the first crash test cost for</p> <p>20 the test was \$68,000. And if we did end up running</p> <p>21 an additional test, the second test would have cost</p> <p>22 \$58,000.</p> <p>23 Q. So \$10,000 less, is that just because of</p> <p>24 economies of scale?</p> <p>25 A. Yeah, certain things would have already</p>
<p style="text-align: right;">Page 55</p> <p>1 Q. So the day that the first crash -- well,</p> <p>2 strike that.</p> <p>3 This crash test was run May 15th, 2023?</p> <p>4 A. That's correct.</p> <p>5 Q. And so the second set of crash test</p> <p>6 vehicles were prepped to run the second crash test on</p> <p>7 the same day, if needed?</p> <p>8 A. It would have been May 16th.</p> <p>9 Q. Okay. The next day?</p> <p>10 A. Yeah.</p> <p>11 Q. Okay. And does it take the whole day to</p> <p>12 run the crash test, in other words, can Exponent only</p> <p>13 run -- run one crash test per day?</p> <p>14 A. It depends on the parameters, so for</p> <p>15 instance, this crash test we ran it just before</p> <p>16 lunchtime, if we had everything ready to go</p> <p>17 completely on the other set of vehicles, we could</p> <p>18 have run the second test that day. We hadn't planned</p> <p>19 on doing that, we were going to have to swap the</p> <p>20 instrumentation and the ballasts and everything over,</p> <p>21 and that would have taken us most of the afternoon.</p> <p>22 And so we had planned on if we needed to run the</p> <p>23 second test if something went wrong on the first one,</p> <p>24 we could have run it the second day, the May 16th.</p> <p>25 Q. And so does the client have to pay for both</p>	<p style="text-align: right;">Page 57</p> <p>1 been set up for the first test, and so they don't</p> <p>2 need to pay for it a second time, it's already set</p> <p>3 up.</p> <p>4 Q. Okay. Was there any discussion about</p> <p>5 running a second crash test with a lifted F250?</p> <p>6 A. Not that I remember.</p> <p>7 Q. If you were going to help design a crash</p> <p>8 test that determined how much intrusion is</p> <p>9 attributable only to the lift kit, how would you</p> <p>10 design that crash test or set of crash tests?</p> <p>11 A. Well, it depends on the data that I've</p> <p>12 already got presented to me. So in this case, we had</p> <p>13 an, essentially, a crash, with a lifted F250, which</p> <p>14 was the subject crash, and so that information's</p> <p>15 already known, and so we wanted -- if you were -- if</p> <p>16 I was designing a test series, I would want to try</p> <p>17 and figure out what are my unknowns. And so in this</p> <p>18 particular case the unknown would be, okay, we know</p> <p>19 what the -- what the values are, what the information</p> <p>20 is for a lifted truck, what are the values for a</p> <p>21 non-lifted truck.</p> <p>22 Q. Uh-huh. And so, in your opinion, the only</p> <p>23 difference between the two crashes being one is the</p> <p>24 subject crash and one is the crash test, it's just</p> <p>25 the lift or no lift, correct?</p>

<p style="text-align: right;">Page 58</p> <p>1 A. That's my understanding.      2 Q. Okay. So your -- your opinion the cargo      3 doesn't make a difference that was in the subject      4 crash? Are you aware of the cargo?      5 A. There was discussions about the cargo when      6 we had our -- our -- our phone conferences, and the      7 information that was given to me that -- was that we      8 weren't going to run with the cargo in there, because      9 of the unknowns of the cargo.      10 Q. Okay. So let me just make sure I      11 understand correctly, because I'm -- I'm looking for      12 an answer on how you isolate just what is the lift      13 responsible, how does the lift change the crush      14 profile. So in order to isolate all the variables      15 except for the lift, how do you design a set of tests      16 for that answer?      17 A. Right. So in that case, we would want to      18 do as much as we could to duplicate the vehicles.      19 Sometimes it's not 100 percent possible to duplicate      20 every single aspect, and so when we're working      21 just -- if I'm -- if I'm answering generally how you      22 would run a test or set something up, you want to      23 duplicate everything as much as you can. Not      24 everything is -- you're not able to duplicate      25 everything perfectly in the real world, and so you</p>	<p style="text-align: right;">Page 60</p> <p>1 prepped and ready to go with the wheels that were      2 purchased for use for the lift, and then you ran the      3 exact same crash test, would you be able to isolate      4 how much of the deformation is due to the lift?      5 MR. HILL: Object to the form.      6 But go ahead.      7 THE WITNESS: So your question is if we run      8 one with the lift and then one without the lift --      9 BY MS. CANNELLA:      10 Q. Yes.      11 A. -- to isolate that?      12 Well -- so, in this particular case we      13 essentially have a crash test with the lift on it      14 already. It's the subject crash.      15 Q. But it has the cargo, right?      16 A. It does have the cargo.      17 Q. So if you just wanted to isolate the effect      18 of the lift, could you run the same crash test that      19 you actually ran, but put the lift and the wheels      20 that were purchased for use with the lift, and then      21 do the same thing. And then you would get just a      22 straight comparison of crush, correct?      23 MR. HILL: Same objection.      24 But go ahead.      25 THE WITNESS: Well, so -- so that -- adding</p>
<p style="text-align: right;">Page 59</p> <p>1 have to determine what's going to be significant      2 factors, what's not significant factors, what's going      3 to make -- what's going to actually make a difference      4 and what's not necessarily going to make a      5 difference. And then the things that you duplicate      6 are the things that you know are absolutely going to      7 make a difference. And if you can't duplicate      8 something, then you have to decide is that really      9 absolutely necessary or is it really going to change      10 the potential outcome at all. And then you work      11 basically specifics by specifics and go through and      12 figure out what you need to duplicate and what you      13 don't.      14 Q. So was that analysis done for the cargo,      15 the analysis of whether it's going to make a      16 difference? Do you know?      17 A. So in this particular case, that -- those      18 decisions were left up to Mr. Grimes and Dr. Gwin.      19 Q. Okay. So you don't have an opinion whether      20 the cargo is going to make a difference?      21 A. I do not.      22 Q. Okay. If you ran a crash test just like      23 the one that you guys ran --      24 A. Uh-huh.      25 Q. -- but put a lift on the F250 that was</p>	<p style="text-align: right;">Page 61</p> <p>1 the lift, it all depends on whether the cargo is      2 deemed to really change anything or not.      3 BY MS. CANNELLA:      4 Q. Yeah.      5 A. And that was something that I believe      6 Mr. Grimes looked at --      7 Q. Did you decide --      8 A. -- or maybe Dr. Gwin.      9 Q. Did either Mr. Grimes or Dr. Gwin decide      10 whether the cargo would be a significant factor?      11 A. You'd have to ask them. I believe      12 the -- the consensus was it would not affect the      13 deformation significantly, which is why they      14 requested that I not run any cargo in the rear.      15 Q. And did they talk to you about the reason      16 for not putting crash test dummies in the vehicle?      17 A. There was discussion about crash test      18 dummies, and at the end of the day the request was to      19 run without crash test dummies.      20 Q. Do you know why that was the decision?      21 A. I don't.      22 Q. And in your experience doing all these      23 crash tests, if you put a dummy in the front seat,      24 the front seat's designed to yield backwards in a      25 rear impact, correct?</p>

<p style="text-align: right;">Page 62</p> <p>1       MR. HILL: Object to the form.      2       But go ahead.      3       THE WITNESS: Yes, in a high-speed rear      4 impact like this, usually we see some -- some      5 deformation of the rear seat.      6 BY MS. CANNELLA:      7       Q. And in your experience, the bigger the      8 dummy, the more deformation, correct?      9       A. Typically.      10      Q. Okay. And so would you expect the front      11 seat to have behaved differently if there had been a      12 crash test dummy in the driver's seat?      13      MR. HILL: Object to the form.      14      Go ahead.      15      THE WITNESS: We could have gotten      16 different results on the -- the front seats.      17 BY MS. CANNELLA:      18      Q. Okay. What experts do you usually work      19 with when you're designing crash tests?      20      A. I get calls from lots of different firms.      21 Sometimes it's other Exponent employees who are      22 working on projects and going to be testifying and      23 want to run a crash test to determine some parameters      24 or -- or trying to figure out an answer to a      25 question. I've worked with lots of law firms and</p>	<p style="text-align: right;">Page 64</p> <p>1       car seat in it.      2       Q. The \$68,000 estimate or I guess you would      3 call it a budget for the crash test --      4       A. Uh-huh.      5       Q. -- did that include your time or is your      6 time billed separately?      7       A. No, that -- that includes my time.      8       Q. Did you go over that budget at all and have      9 to charge additional hourlies?      10      A. No. So -- and, sorry, just to be clear, so      11 that's -- that -- that budget, that \$68,000 is for      12 the actual crash test activity. So when I'm putting      13 the report together, taking the photographs, getting      14 the vehicle set up, that's included in that. Any --      15 any consulting time or any discussion of parameters      16 is outside of that. So that assumes I've got all the      17 parameters and I'm just going to execute that test      18 with parameters ABC. If we're discussing what those      19 parameters are, that's additional time that gets      20 billed on top of it.      21      Q. Does Exponent have like a form people fill      22 out for parameters so that you know what they are?      23      A. No.      24      Q. Just -- how do you get that information?      25      A. So through -- through our phone calls we</p>
<p style="text-align: right;">Page 63</p> <p>1 experts outside of Exponent as well. It's a pretty      2 large number.      3       Q. Let me reframe my question, then.      4       How about inside of Exponent, who are the      5 experts that you work with the most?      6       A. The most? It's a pretty good mix. I've      7 worked with Dr. Carhart. I've worked with      8 Mr. Croteau. I've worked with -- see who else gives      9 me a call. I've worked with Dr. Rapp van Roden. Now      10 you're putting me on the spot to try and remember all      11 the names now. There's a significant -- because the      12 Phoenix office is where we do all of our testing, we      13 get calls from all of our other offices when they      14 want to do large testing. And so I get calls from a      15 lot of different experts.      16       Q. Let's see, were there any conversations      17 about whether to install a car seat in the second row      18 of the Escape for your crash test?      19       A. There -- there could have been. Trying to      20 remember all the discussions from our -- from our      21 phone calls. There may have been some discussion      22 around car seat, it would have been similar      23 discussion as with the dummies. Ultimately the      24 parameter that they -- that Dr. Gwin and Mr. Grimes      25 gave me was to run without an ATD and run without a</p>	<p style="text-align: right;">Page 65</p> <p>1 discuss the parameters. They're given to me. I pass      2 that to my team, usually verbally, we're -- we've got      3 the vehicles, I tell them, hey, this is -- I can      4 point to the vehicle, this is where I want the      5 instrumentation. This is where I want the ballast      6 weights to be. And we get that set up, and then all      7 of that gets documented in the test report. So we      8 have all those parameters that we can look back on.      9       Q. So you get the parameters verbally and then      10 you transmit them verbally to the crash test team?      11      A. Yes. And I -- and I -- I do take notes of      12 what those parameters are, and then I transcribe my      13 notes into my test report. So essentially my test      14 report is my set of notes for those parameters.      15      Q. Okay. There's no transcription separate      16 from the report?      17      A. No.      18      Q. And so you speak them -- I'm sorry, can you      19 repeat that process again?      20      A. Sorry, I -- yeah, I jot them -- I jot them      21 down when I have my test parameters, so for instance      22 this 10.9-inch offset, you know, I make a note of      23 10.9-inch offset and then when I -- when I put my      24 report together, that 10.9-inch note goes right in      25 here, and that's essentially my notes now is my test</p>

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<p>1 report.</p> <p>2 Q. And then what happens to the handwritten</p> <p>3 notes?</p> <p>4 A. I don't keep those, because everything's in</p> <p>5 my test report.</p> <p>6 Q. So you just toss those?</p> <p>7 A. Yeah, I don't keep them.</p> <p>8 Q. Okay. Have you ever done offset crash</p> <p>9 testing before?</p> <p>10 A. Yes.</p> <p>11 Q. Have you ever done any testing for IIHS?</p> <p>12 A. Directly for them?</p> <p>13 Q. Yes, sir.</p> <p>14 A. No.</p> <p>15 Q. Have you ever done any development testing</p> <p>16 for auto manufacturers, in other words, testing that</p> <p>17 they use to develop their designs?</p> <p>18 A. Not that I'm aware of.</p> <p>19 Q. Okay. Is the testing that you do for</p> <p>20 automakers all related to litigation?</p> <p>21 A. Most of it, but not all of it.</p> <p>22 Q. Okay. What -- what testing have you done</p> <p>23 for automakers that's not related to litigation?</p> <p>24 A. We've done some investigatory work that are</p> <p>25 not necessarily tied to litigation.</p>	<p>1 tests.</p> <p>2 Q. Did you bring a copy of that with you</p> <p>3 today?</p> <p>4 A. I did not.</p> <p>5 Q. Do you have access to a copy?</p> <p>6 A. It's publicly available on the SAE website,</p> <p>7 so yes, I do have access to -- to get that.</p> <p>8 Q. Okay. And it wasn't included in your</p> <p>9 report or mentioned in your report, correct?</p> <p>10 A. It was not.</p> <p>11 Q. Is there a reason for that?</p> <p>12 A. That's just a standard practice that we run</p> <p>13 most of our crash testing to.</p> <p>14 Q. Does it address offset?</p> <p>15 A. It does not.</p> <p>16 Q. Does it address camera positioning?</p> <p>17 A. It has some best practices for, I don't</p> <p>18 believe exact camera positioning, but just some</p> <p>19 camera speeds, depending on the test, it makes</p> <p>20 recommendations such as if it's a high-speed test you</p> <p>21 want to run your cameras at a higher frame rate,</p> <p>22 lower speed tests you may run at a lower frame rate,</p> <p>23 fairly basic stuff like that.</p> <p>24 Q. Does it address how to ballast vehicles?</p> <p>25 A. It does not.</p>
Page 67	Page 69
<p>1 Q. Like what?</p> <p>2 A. I'm trying to remember what the work</p> <p>3 actually was. But I knew it wasn't tied to</p> <p>4 litigation, it was just they had some questions about</p> <p>5 something, I -- I can't remember off the top of my</p> <p>6 head.</p> <p>7 Q. Okay. Not much of that, then, it sounds</p> <p>8 like?</p> <p>9 A. It's not a majority of our work, no.</p> <p>10 Q. Okay. And is it related to potential</p> <p>11 problems with the car that they're trying to figure</p> <p>12 out?</p> <p>13 A. Again, I don't remember. I don't know if</p> <p>14 it was a problem or if they were trying to figure out</p> <p>15 a better way that it -- if something was interfering</p> <p>16 with something else, I don't remember.</p> <p>17 Q. All right. When you do an offset crash</p> <p>18 test, do you follow a methodology? There's a -- do</p> <p>19 you follow a test procedure that's standard?</p> <p>20 A. As far as any standards we do, we</p> <p>21 follow -- so the SAE, which stands for Society of</p> <p>22 Automotive Engineers, they publish a lot of standards</p> <p>23 and recommended practices, and the one that we follow</p> <p>24 for our vehicle crash testing is SAE Standard J211,</p> <p>25 and that's a best practices for -- for running crash</p>	<p>1 Q. So what does it address?</p> <p>2 A. Like I said, it addresses some of the</p> <p>3 general camera specifications. It addresses data</p> <p>4 collection and data filtering and data processing.</p> <p>5 I'm sure it addresses some other things that I can't</p> <p>6 remember off the top of my head right now.</p> <p>7 Q. Are there any other standards that you use</p> <p>8 for crash testing?</p> <p>9 A. For crash testing in general?</p> <p>10 Q. Uh-huh.</p> <p>11 A. Again, it depends on the crash test. We</p> <p>12 have run crash tests to standards. So if you want to</p> <p>13 run an actual NHTSA crash test or an IIHS crash test,</p> <p>14 there are printed protocols that we would print up</p> <p>15 and follow for that particular test. In this case,</p> <p>16 this is not a standard test, it's not matching any</p> <p>17 government testing that's out there. We're matching,</p> <p>18 from my understanding from what Mr. Grimes and</p> <p>19 Dr. Gwin gave me, we're matching the subject vehicle</p> <p>20 parameters.</p> <p>21 Q. Okay. The NHTSA and IIHS protocols, did</p> <p>22 those exist for offset crash tests as well?</p> <p>23 A. There are offset crash tests that are</p> <p>24 prescribed by both NHTSA and IIHS.</p> <p>25 Q. Okay. And how many inches of offset in</p>

<p style="text-align: right;">Page 70</p> <p>1 those -- in the NHTSA crash test -- offset crash      2 tests?      3 A. I don't remember off the top of my head.      4 Q. How about IIHS?      5 A. IIHS has two different offset tests that      6 are frontal offsets. I don't know if their rear      7 impact is an offset test. I'd have to go and look at      8 their -- their testing protocols to see if they have      9 a rear impact offset test.      10 Q. Well, wouldn't a rear impact be a frontal      11 impact for the car hitting the -- I mean --      12 A. Correct.      13 Q. -- it's rear in one car, but frontal to the      14 other?      15 A. Correct.      16 Q. Okay.      17 A. But their -- their frontal tests are not      18 into vehicles, they're into barriers.      19 Q. Ah, okay.      20 A. So in this case it would be relevant      21 potentially for the F250, but a frontal offset would      22 not be relevant for the Ford Escape.      23 Q. So for the offset amounts in those crash      24 tests, do you know if it's a specific number or a      25 range?</p>	<p style="text-align: right;">Page 72</p> <p>1 Q. Any other reason?      2 A. I wasn't requested to -- to verify it in      3 that particular way.      4 Q. Were you requested to verify it in any way?      5 A. After the test, we looked at the vehicle,      6 generally, and -- and the offset appeared to be      7 correct. So it was a visual inspection post test.      8 Mr. Grimes and Dr. Gwin both looked at it and      9 basically said that's what they expected with the      10 offset that they had given me.      11 Q. Do you know of any standardized offset      12 crash procedure that allows the people doing the      13 crash test to visually determine without any kind of      14 measurements whether the offset hit its goal?      15 A. So the one method I discussed where you      16 kind of have that marker pin on the front, it -- when      17 it hits the -- I'm trying to remember if it hits a      18 barrier or if it's hitting another vehicle, but the      19 marker pin makes a mark, and so then you can visually      20 see where that mark was made and where your offset      21 actually ended up.      22 Q. I guess -- I guess I didn't ask the      23 question right. But my question is whether there's      24 any test procedure that allows the people performing      25 the procedure to essentially eyeball it without a</p>
<p style="text-align: right;">Page 71</p> <p>1 A. Those -- those are typically a percentage      2 and so it's not a specific number, because it's a      3 percentage of the width of the vehicle. So a vehicle      4 that's 60 inches wide, for example, I -- I -- if it's      5 a 50 percent offset, and it's a 60-inch wide vehicle,      6 then you're going to offset at 30 inches. If it's an      7 80-inch-wide vehicle and you offset it 50 percent,      8 it's going to be a 40-inch offset, so those offsets      9 are typically given by percentage not by a specific      10 number.      11 Q. And under those test protocols, how -- how      12 do they ensure that they've hit the offset mark?      13 A. It depends on the protocol. There      14 are -- in one of the protocols they actually put a,      15 for lack of a better term, a marker pin on the front      16 of the vehicle that they have set up pointing at a      17 target and the target gives you a window that that      18 marker pin has to be in in order for that to be      19 considered a successful test.      20 Q. And did you do that with your crash test?      21 A. We did not.      22 Q. And why not?      23 A. It -- one, it's not following that specific      24 protocol, and so that reference window would not      25 necessarily mean anything in this particular case.</p>	<p style="text-align: right;">Page 73</p> <p>1 physical visual mark or forensic piece of evidence or      2 a measurement?      3 MR. HILL: Object to the form.      4 But go ahead.      5 THE WITNESS: Yeah, so that -- that      6 marker's only in the one protocol that I can      7 remember. So there's other protocols that don't have      8 that marker that you would just visually look at to      9 make sure that you've got your alignment correct that      10 you hit the target the way you needed to.      11 BY MS. CANNELLA:      12 Q. Okay. Which protocols are those?      13 A. I don't know off the top of my head, but, I      14 mean, a lot of the frontal impacts are into barriers      15 where you're looking at the damage to the vehicle to      16 see if your alignment was correct.      17 Q. And there's no measurement to make sure      18 that the alignment was correct?      19 A. Not that I recall in the protocols      20 themselves, where it says you have to measure this      21 specific distance or these points or something to      22 verify that your -- your alignment was correct.      23 Q. As you're sitting here today, can you tell      24 me any of those that you're talking about?      25 A. I'm -- I'm trying to think to some of the</p>

<p style="text-align: right;">Page 74</p> <p>1 IIHS protocols that I've run. It's been a while      2 since I've run one of those, so I don't know all the      3 details of any of those protocols, but some of the      4 IIHS offset tests have just a visual marker where you      5 just look at it and see if it impacted in that area.</p> <p>6 Q. Okay. But those -- let's set those      7 aside --</p> <p>8 A. Okay.</p> <p>9 Q. -- because that has, like, a piece of      10 forensic evidence that you can use to confirm whether      11 you hit your mark. So what I'm looking for is what      12 was done in this case. In other words, no forensic      13 piece of evidence, just a couple of experts looking      14 at it and saying that looks about right?</p> <p>15 MR. HILL: Object to the form.      16 Go ahead.</p> <p>17 THE WITNESS: So I guess I don't quite      18 understand what you mean by "forensic evidence."</p> <p>19 BY MS. CANNELLA:</p> <p>20 Q. Well, the match point between the marker,      21 the piece of metal you're talking about and what it      22 hits, that gives you forensic evidence you can      23 look at --</p> <p>24 A. Correct.</p> <p>25 Q. -- right?</p>	<p style="text-align: right;">Page 76</p> <p>1 requirement, there's nothing like that.      2 Do you know of any test procedure like      3 that?</p> <p>4 MR. HILL: Object to the form.      5 THE WITNESS: So that's what I was      6 answering before. So we talked about the pointer,      7 and I'm not talking about that pointer, there is, in      8 some of the offset tests, there is just a piece of --      9 you've got your pre-test measurement with your      10 offset, and then you look at the -- the vehicle post      11 test and you can see where the damage pattern starts.      12 And if it's where you've got that offset mark at,      13 then you're within your -- your test parameters, and      14 you've offset the vehicle the correct amount.</p> <p>15 BY MS. CANNELLA:</p> <p>16 Q. So what I'd like to do is be able to go      17 look at those procedures so that we can see.</p> <p>18 A. Uh-huh.</p> <p>19 Q. What are they?</p> <p>20 A. I would look at the IIHS offset frontal      21 tests.</p> <p>22 Q. Okay. Any others?</p> <p>23 A. You can look at the -- probably the NHTSA      24 or NCAP frontal tests to see -- I don't believe there      25 is any procedure or protocol in there that has a</p>
<p style="text-align: right;">Page 75</p> <p>1 So what I'm looking for is whether there is      2 any test procedure that is just take a look at it and      3 see if it looks right for the offset?</p> <p>4 MR. HILL: Object to the form.      5 But go ahead.</p> <p>6 THE WITNESS: So -- so in this case we do      7 have forensic evidence that lines up. I mean, you      8 showed me in Plaintiffs' Exhibit --</p> <p>9 BY MS. CANNELLA:</p> <p>10 Q. I'm not talking about --</p> <p>11 MR. HILL: Let him finish. He needs to      12 finish.</p> <p>13 BY MS. CANNELLA:</p> <p>14 Q. You're answering a different question,      15 so --</p> <p>16 MR. HILL: I don't think he is. Let him      17 answer the question.</p> <p>18 BY MS. CANNELLA:</p> <p>19 Q. -- a test procedure -- just a test      20 procedure, like, NHTSA, IIHS, SAE, like, whatever      21 kind of organization that has a procedure that we can      22 go look at and say, you know, after you're done with      23 your offset, in order to make sure that you hit your      24 mark, just look at it so there's no point, match      25 point requirement, there's no measurement</p>	<p style="text-align: right;">Page 77</p> <p>1 specific measurement like you have to go and put a      2 tape measure on it to make sure your offset's the      3 correct way, it would just be a post-test visual.</p> <p>4 Q. Okay. All right. And do you know the name      5 of those tests, like for NHTSA, FMVSS number, number,      6 number?</p> <p>7 A. Yeah, so your FMVSS tests, you can run      8 several of those with a single crash test, so you can      9 go and look at your 35-mile-an-hour frontal barrier      10 NCAP test, trying to think of what other NHTSA      11 testing you could go and look at. Maybe some of the      12 side impact testing that NHTSA runs.</p> <p>13 Q. Is that offset?</p> <p>14 A. Those are full overlap, but they are      15 grabbed, meaning that the -- the vehicle coming in is      16 actually coming in at an angle.</p> <p>17 Q. Okay. I'm looking for offset ones, though.</p> <p>18 A. Okay.</p> <p>19 Q. Any offset ones?</p> <p>20 A. I can't remember any more.</p> <p>21 Q. Okay. That's a fine answer. I'm just      22 trying to make sure.</p> <p>23 THE REPORTER: Is this a good time for a      24 restroom break?</p> <p>25 MS. CANNELLA: Yes, ma'am.</p>

<p style="text-align: right;">Page 78</p> <p>1       MR. HILL: Yeah, we've been going an hour      2 and a half, I was going to suggest that too.      3       THE VIDEOGRAPHER: We're going off the      4 record. The time is 10:31.      5       (Recessed from 10:31 a.m. until 10:40 a.m.)      6       THE VIDEOGRAPHER: We're back on the      7 record. The time is 10:40.      8 BY MS. CANNELLA:      9       Q. All right. I got kind of a lot of boring      10 stuff to go through, so bear with me.      11       You've never had experience working for      12 automotive manufacturers, correct?      13       A. In -- actually in the industry, so working      14 for a, like, they were my employer?      15       Q. I'll rephrase. You've never been an      16 employee of an automotive manufacturer, correct?      17       A. Correct.      18       Q. And you've never been an employee of a      19 component manufacturer?      20       A. Correct.      21       Q. You've never designed a suspension,      22 correct?      23       A. Correct.      24       Q. You've never created specifications for      25 suspensions?</p>	<p style="text-align: right;">Page 80</p> <p>1       that, I would agree with that.      2       Q. Do you agree that your report only contains      3 the facts of the crash test but no expert opinions?      4       MR. HILL: Object to the form.      5       But go ahead.      6       THE WITNESS: Well, it has my test report,      7 I would say that my report contains my opinions that      8 I ran the crash test to the parameters that I was      9 given. To that extent I would say yes, it does have      10 some opinions in it. But beyond that scope, I would      11 say no.      12 BY MS. CANNELLA:      13       Q. Okay. Are you drawing any conclusions      14 based on the testing done on this case?      15       A. No.      16       Q. Have you drawn any conclusions otherwise in      17 this case?      18       A. As to specifically to the crash test or to      19 something else?      20       Q. Just in general, anything that's not      21 covered in the crash test materials here, have you      22 drawn any conclusions?      23       A. Other than that the crash test was run      24 appropriate to the parameters I was given. Outside      25 of that, I don't.</p>
<p style="text-align: right;">Page 79</p> <p>1       A. No.      2       Q. Have you ever created specifications for      3 lift kits?      4       A. No.      5       Q. Have you ever been hired by an automotive      6 component manufacturer to run testing as part of that      7 manufacturer's development process?      8       A. Not that I'm aware of.      9       Q. Have you ever been hired by a safety      10 organization?      11       MR. HILL: Object to the form.      12       But go ahead.      13       THE WITNESS: Not that I'm aware of.      14 BY MS. CANNELLA:      15       Q. Did any other Exponent testifiers work on      16 this case?      17       A. Not that I'm aware of, no.      18       Q. Nobody that does defect testimony?      19       A. No.      20       Q. And nobody who does biomechanic testimony?      21       A. No.      22       Q. Do you agree that your report does not      23 contain opinions?      24       A. To the extent of I don't have any opinions      25 about reconstruction or biomechanics or anything like</p>	<p style="text-align: right;">Page 81</p> <p>1       Q. Do you hold any opinions in the case that's      2 not covered in the report?      3       A. No.      4       Q. Is there any other work you're planning on      5 doing in the case?      6       A. Not at this time.      7       Q. Have you written a report for federal court      8 before?      9       A. Yes.      10       Q. And you're familiar with the fact that the      11 report has to contain a complete statement of all      12 opinions the witness will express and the basis and      13 reasons for them?      14       A. Yes.      15       Q. And does your report contain that?      16       A. Yes.      17       Q. And, in addition, under the federal rules,      18 the report has to contain the facts or data      19 considered by the witness informing his opinions.      20       Does your report contain those?      21       A. Yes.      22       Q. Any others that are not in the report?      23       A. Not that I'm aware of.      24       Q. And, in addition, the federal rule requires      25 that your report contain any exhibits that will be</p>

<p>1 used to summarize or support your opinions.      2 Does your report contain those items?      3 A. Yes.      4 Q. Are there any other of those items that you      5 intend to add?      6 A. Not that I'm aware of.      7 Q. Okay. And your report also has to contain      8 your qualifications, including a list of all      9 publications authored in the previous 10 years.      10 Does your report contain that?      11 A. Yes.      12 Q. Is anything missing?      13 A. No.      14 Q. Your report's supposed to contain --      15 A. Sorry.      16 Q. Sorry, go ahead.      17 A. To the extent of I did just have a new      18 paper published just last month, and so that may not      19 be included in that list. Sorry, I apologize.      20 Q. That's okay. That's why I ask, because      21 it's hard to think of stuff otherwise. But is      22 the --      23 A. In fact, my testimony list doesn't have a      24 deposition that I just gave last week as well, now      25 that I'm thinking about it.</p>	<p>Page 82</p> <p>1 A. We do it as part of our employment, so      2 Exponent doesn't directly pay me to do it, but I can      3 do it during work hours, and so as part of my general      4 work duties, I am getting paid to -- to      5 be at Exponent.      6 Q. All right. And then the other testimony      7 that you gave, what case was that or do you remember      8 the name of it?      9 A. The case is Alailefaleula -- I apologize, I      10 am not going to be able to spell that -- I'm going to      11 have to go look that up to do that, but it was      12 Alailefaleula v. FCA.      13 Q. And FCA is Chrysler, correct?      14 A. Correct.      15 Q. And were you on the side of Alailefaleula      16 or FCA?      17 A. I was running some crash testing for FCA.      18 Q. And what is the issue in that case?      19 A. That case, my understanding is a -- I      20 believe it's a fire case. Again, I don't know all      21 the details of the subject incident itself. I was      22 contacted in that case to run some crash testing.      23 They provided me with the parameters they -- they      24 wanted to run.      25 Q. What's the vehicle?</p>
<p>1 Q. Okay. And what is the article that you      2 just got published?      3 A. It's a really long title, so I'd have to go      4 back and look it up, but it was a -- general gist of      5 it was some sled testing we were doing with airbag      6 deployments and looking at the efficacy of airbag      7 deployments in different Delta-v speeds.      8 Q. Okay. And what did you find?      9 A. The findings for that paper were it really      10 was dependent on the speeds as to whether the airbag      11 was truly effective or not in preventing injury. And      12 it was looking at kind of twofold, does the airbag      13 help prevent injury and/or does the airbag itself      14 cause injury. And so the results were the airbag is      15 helpful at preventing injury in higher speed stuff,      16 it may not be helpful in preventing injury in lower      17 speed, but it did not cause additional injury in      18 lower speed incidents.      19 Q. Okay. And did somebody hire you to do that      20 paper or was that just something you did on your own?      21 A. That was -- that was something that myself,      22 a couple of colleagues, we did on our own as part of      23 some ongoing safety research.      24 Q. Does Exponent pay you to do that or      25 somebody else or did you just do it on your own?</p>	<p>Page 83</p> <p>1 A. So the vehicles I was crash testing was a      2 Lexus into the rear of a Ford Explorer.      3 Q. And what did you find in your crash tests?      4 A. In that particular case, the Ford Explorer      5 fuel tank was filled with Stoddard, which is a      6 solution that is similar to gasoline, but just less      7 flammable, so that we don't cause a fire. And we      8 were testing whether the tank, in an incredibly      9 high-speed rear impact, would potentially rupture and      10 spill fluid.      11 Q. And did the tank rupture in that crash      12 test?      13 A. It did.      14 Q. Do you know who the plaintiff's lawyer is      15 in that case was?      16 A. I don't.      17 Q. And do you know where it's pending?      18 A. I believe that one is in Las Vegas.      19 Q. Do you know who the defense lawyers are in      20 the case?      21 A. The defense lawyers were lawyers for the      22 firm Klein Thomas.      23 Q. Thomas Klein?      24 A. Thomas Klein. Well, but I wasn't working      25 with Mr. Klein directly. I was working with -- oh,</p>

22 (Pages 82 - 85)

<p style="text-align: right;">Page 86</p> <p>1 what was his name -- Derek Swanson.      2 Q. Okay. All right. Anything else that you      3 can think of as far as depositions or trial testimony      4 or other articles?      5 A. No, those would be the -- those would be      6 the updates.      7 Q. Okay. And then your report must also      8 contain a statement of the compensation to be paid      9 for the study and testimony in the case, and I know      10 you've got your fee, your hourly fee in your report,      11 and then would the invoices that were provided today      12 constitute a full disclosure of the compensation to      13 be paid in the case?      14 A. Yes.      15 Q. Okay. Excuse me.      16 All right. The testing in the case was May      17 15th, 2023, and your report was finished about a year      18 later, March 29th, 2024, what happened in between      19 those days, anything?      20 A. No.      21 Q. Okay. Did you just wait to sign and      22 complete the report for when it was needed?      23 A. Correct. Yes.      24 Q. Okay. And does your report contain all the      25 factual details of the May 15th, 2023, testing,</p>	<p style="text-align: right;">Page 88</p> <p>1 evaluation of vehicle simulation and accident      2 reconstruction computer software.      3 Did you do any evaluation of vehicle      4 simulation or computerized accident reconstruction in      5 this case?      6 A. In this case, no.      7 Q. Did Rough Country ask you to do any vehicle      8 simulation or computerized accident reconstruction in      9 the case?      10 A. They did not.      11 Q. And it says that "You're expected to      12 testify as to the parameters, measurements, and      13 results of the crash" -- I assume that's the crash      14 test -- "as documented in your extensive crash report      15 attached hereto."      16 And we've already said that there's no      17 other parameters, measurements, or results besides      18 what's in your report, correct?      19 A. Correct.      20 Q. Okay. The next thing it says is that you      21 will testify as to the specific details of the      22 vehicles involved in the exemplar crash testing. The      23 details regarding procedure and parameters for the      24 test. His recordings of the test and his photographs      25 and recordings of the exemplar vehicles following the</p>
<p style="text-align: right;">Page 87</p> <p>1 including the testing setup and testing results?      2 A. Yes.      3 Q. Does it contain all measurements you took?      4 A. Yes.      5 Q. Does it contain all the parameters of the      6 test?      7 A. Yes.      8 Q. And does it include all the details of the      9 test setup?      10 A. Yes.      11 MS. CANNELLA: I want to show you what I've      12 marked as Plaintiffs' Exhibit 119. Oh, wait -- yes,      13 119 -- which is an excerpt of the disclosures in the      14 case, disclosing your testimony.      15 (Marked for identification Exhibit 119.)      16 BY MS. CANNELLA:      17 Q. If you will turn to -- turn one page to the      18 section with your name on it.      19 A. Okay.      20 Q. Have you seen this before, this disclosure?      21 A. I have not.      22 Q. Okay. It says, the first sentence under      23 your name, that you're a professional engineer and an      24 expert in the fields of accident reconstruction and      25 vehicle crash analysis. You're an expert in the</p>	<p style="text-align: right;">Page 89</p> <p>1 test.      2 Can you tell me what you're going to      3 testify about regarding the specific details of the      4 vehicles?      5 A. So I will be going through my test report.      6 The vehicle details are contained in the test report,      7 so that's what I would be talking about and going      8 through.      9 Q. Okay. So that captures -- the test report      10 captures all the things that that sentence refers to?      11 A. Yes.      12 Q. All right. On the -- I'm going to get back      13 to the recordings and the photographs, but let me ask      14 you this first, just for the record, you didn't do an      15 inspection of the subject vehicles in this case,      16 correct?      17 A. I did not.      18 Q. And you didn't review any of the document      19 productions in the case?      20 A. No.      21 Q. In the correspondence there's some      22 documents that were transmitted to you as far as      23 depositions and Ford documents and that kind of      24 thing, you didn't review those?      25 A. No.</p>

<p style="text-align: right;">Page 90</p> <p>1 Q. So you're not relying on them, obviously?</p> <p>2 A. No.</p> <p>3 Q. Okay. Do you know why they were sent to</p> <p>4 you?</p> <p>5 A. I was probably included on an e-mail list,</p> <p>6 but that's just a guess.</p> <p>7 Q. Okay. That's fine if you don't know, I was</p> <p>8 just wondering.</p> <p>9 All right. Okay. So let's talk about the</p> <p>10 crash test. Do you agree that you relied on</p> <p>11 Mr. Grimes for the vehicle selection as far as what</p> <p>12 parameters you needed the vehicles to meet?</p> <p>13 A. Yes.</p> <p>14 Q. And what did he tell you?</p> <p>15 A. I was told to get a 2008 Ford Escape, a</p> <p>16 2016 Ford F250. I have a document that his</p> <p>17 associate, Ann Grimes, sent over to me that gave, I</p> <p>18 think the subject vehicle VIN numbers. And so we</p> <p>19 used that to kind of look up parameters of the</p> <p>20 vehicles to match those as best we can. And then as</p> <p>21 we find vehicles to purchase, we will make sure that</p> <p>22 those parameters match.</p> <p>23 Q. Did the parameters include whether the</p> <p>24 vehicles should have sunroofs or not?</p> <p>25 A. The sunroof was a request, but not a</p>	<p style="text-align: right;">Page 92</p> <p>1 Q. Okay. And what was the date that the</p> <p>2 Escape used in the test was purchased?</p> <p>3 A. The Escape?</p> <p>4 Q. Yes, sir.</p> <p>5 A. It was 4/11.</p> <p>6 Q. Okay. And what was the date of the other</p> <p>7 Escape purchased?</p> <p>8 A. It would have been 4/13.</p> <p>9 Q. So it's your testimony that Exponent used</p> <p>10 the Escape without the sunroof, even though it had an</p> <p>11 Escape with a sunroof, because it bought the Escape</p> <p>12 without the sun roof two days earlier?</p> <p>13 A. Correct.</p> <p>14 Q. Okay. You also testified earlier that</p> <p>15 Exponent prepared both sets of vehicles for the crash</p> <p>16 test, correct?</p> <p>17 A. Yes.</p> <p>18 Q. Okay. So if both sets of vehicles were</p> <p>19 prepared for the crash test, which didn't take place</p> <p>20 until a month after these vehicles were purchased,</p> <p>21 why didn't Exponent use the Escape with the sunroof?</p> <p>22 A. We prepped both. We could have used either</p> <p>23 for the -- the test. We had prepped the first</p> <p>24 vehicle further along, so it had the actual</p> <p>25 instrumentation and the ballast in it and it was just</p>
<p style="text-align: right;">Page 91</p> <p>1 requirement.</p> <p>2 Q. For which vehicle?</p> <p>3 A. For the Ford Escape.</p> <p>4 Q. Okay. And the other Escape that Exponent</p> <p>5 purchased did have a sunroof, correct?</p> <p>6 A. That's correct.</p> <p>7 Q. And why wasn't that Escape used in the</p> <p>8 crash test?</p> <p>9 A. I think that Escape was the second one that</p> <p>10 we purchased, so we started prepping the first one.</p> <p>11 The first Escape that we started prepping is the one</p> <p>12 we used for the first test.</p> <p>13 MS. CANNELLA: Okay. I'm going to hand you</p> <p>14 what I've marked as Plaintiffs' Exhibit 122, which is</p> <p>15 the vehicle purchase orders for the vehicles that</p> <p>16 Exponent purchased for the case.</p> <p>17 (Marked for identification Exhibit 122.)</p> <p>18 BY MS. CANNELLA:</p> <p>19 Q. The first two invoices here are the</p> <p>20 vehicles that were used, as far as I can tell. The</p> <p>21 VINs match the VIN numbers in your report, you're</p> <p>22 welcome to confirm, I'm sure that's right.</p> <p>23 A. Yeah, I'd have to double-check. Yeah, the</p> <p>24 first two -- the first two pages here are the F250</p> <p>25 and the Escape that were used in the test.</p>	<p style="text-align: right;">Page 93</p> <p>1 further along in its preparation.</p> <p>2 Q. So you got the vehicle in -- the Escape in</p> <p>3 on April 10th and you had it completely prepped by</p> <p>4 April 13th?</p> <p>5 A. Not completely, no.</p> <p>6 Q. Well, how far along were you in the prep?</p> <p>7 A. I don't remember.</p> <p>8 Q. Okay. But it's your testimony that that's</p> <p>9 why the sunroof vehicle, which is the same kind of</p> <p>10 vehicle that the Brysons were in wasn't used because</p> <p>11 it was bought two days later?</p> <p>12 A. That's correct.</p> <p>13 Q. Okay. Are you aware that roof structures</p> <p>14 on vehicles with sunroofs can be different than those</p> <p>15 without sunroofs?</p> <p>16 A. Yes.</p> <p>17 Q. Do you agree that sometimes additional roof</p> <p>18 bows are added to vehicles with sunroofs?</p> <p>19 A. Yes.</p> <p>20 Q. Do you agree that the roof rails can be</p> <p>21 strengthened?</p> <p>22 A. Typically I don't see roof rails changed</p> <p>23 just by adding a sunroof.</p> <p>24 Q. How about the pillars, A, B, or C pillars</p> <p>25 or D?</p>

<p style="text-align: right;">Page 94</p> <p>1       A. Typically don't see any changes in those      2 pillars just with the addition of a sunroof.      3       Q. What did you do to ensure the structures of      4 the vehicles in the crash test were the same as the      5 structures of the vehicles in the Brysons' crash?      6       A. So in this particular case, the first      7 vehicle that -- the vehicle that we actually tested      8 showed up with a trailer hitch on it. And the Bryson      9 vehicle, my understanding was it didn't have one on      10 it, at least that we were requested to remove the      11 trailer hitch, and so we did.      12       Q. Okay. How about the roof structure, what      13 did you do to make sure that the roof structure on      14 the test vehicle was the same as the Brysons' roof      15 structure on their Escape?      16       A. So the rear area of the roof structure is,      17 to my understanding, identical in both vehicles.      18       Q. How do you have that understanding?      19       A. Probably a conversation with Mr. Grimes.      20 He would have -- I'm sure I would have asked the      21 question and it may not have been something that was      22 concerning to him since the sunroof's towards the      23 front of the vehicle, and this test that we're      24 running is an impact to the rear of the vehicle.      25       Q. Okay. So you personally didn't do anything</p>	<p style="text-align: right;">Page 96</p> <p>1       sure we had the same specifications on that, I didn't      2 specifically look at the structures themselves.      3       Q. Okay. All right. Do you agree that the      4 purpose of taking photographs before the crash test      5 is to show the state of the vehicle before the test?      6       A. Yes.      7       Q. And you're trying to document the condition      8 it was in when the crash was run?      9       A. To the best we can, yes.      10       Q. Is there a way to account for the striking      11 vehicle breaking in the actual crash when you're      12 running a crash test?      13       A. Sorry, I don't quite understand the      14 question there.      15       Q. Well, when you run a crash test, if you're      16 simulating a real-life crash and there was braking in      17 the real-life crash, is there a way to recreate that      18 braking in the crash test?      19       A. Yes.      20       Q. How do you do that?      21       A. We can do it a number of different ways.      22 Occasionally we will actually activate the brakes on      23 a vehicle so that the brakes themselves are working      24 prior to impact. More often than not, though, we      25 will make suspension adjustments to adjust bumper</p>
<p style="text-align: right;">Page 95</p> <p>1 to make sure that the roof structures were the same,      2 is that fair, you were relying on Mr. Grimes?      3       A. Yes.      4       MR. HILL: Object to the form.      5       But go ahead.      6       THE WITNESS: Yes.      7 BY MS. CANNELLA:      8       Q. Okay. The -- the -- did the F250, the      9 crashed F250 have a sunroof? I'm sorry, the crash      10 test F250.      11       A. I don't remember off the top of my head.      12 Would you like me to go through the test report?      13       Q. Go for it. Yes, sir.      14       A. The F250 -- the crash test F250 does have a      15 sunroof.      16       Q. Okay. And do you know whether the F250 in      17 our case had a sunroof?      18       A. I do not remember off the top of my head,      19 no.      20       Q. And same question for the F250, was      21 anything done to make sure that the structure of the      22 F250 in the crash vehicle was the same as the      23 structure in the F250 in the wreck -- in the subject      24 wreck?      25       A. Other than matching VIN numbers, making</p>	<p style="text-align: right;">Page 97</p> <p>1 heights, based on what -- how much braking there may      2 or may not be.      3       Q. Okay. So for the -- for the first one, can      4 you explain how that works?      5       A. For the first one, sorry?      6       Q. You said you could either actually activate      7 the brake or you could adjust the height of the      8 bumper, so how does activating the brake work?      9       A. We would install a remote system that we      10 have that would actually activate the braking system      11 on the vehicle.      12       Q. And how accurate is that down -- is it      13 accurate down to a millisecond or what?      14       A. As to when it activates or how it      15 activates?      16       Q. Yeah.      17       A. I'm sorry, I don't quite understand.      18       Q. For example, in this case we had braking in      19 the last second-ish of the wreck.      20       A. Okay.      21       Q. So would you be able to activate it to a      22 second accuracy or is it harder to get it that close      23 to the specific?      24       MR. HILL: Object to the form.      25       But go ahead.</p>

25 (Pages 94 - 97)

<p style="text-align: right;">Page 98</p> <p>1        THE WITNESS: So when we're -- when we're      2 manually activating the brake like that, it is a      3 little more difficult because you have a lot of      4 physics that go into that calculation. So you have      5 to start the braking at a very precise point, but      6 everything's a little bit different. If you don't      7 know the absolute exact amount of braking that got      8 put in then you are just kind of estimating, so for      9 instance, just because you have a second of braking      10 was that a second of soft braking, was that a second      11 of fairly aggressive braking, or is that a second of      12 absolute emergency panic braking? And those are      13 three very different parameters that completely      14 change how you would input that.</p> <p>15 BY MS. CANNELLA:</p> <p>16        Q. How would you normally figure out the      17 answer to that question?</p> <p>18        A. Well, typically, like I said, normally we      19 don't do that because of the amount of parameters      20 that have to go in that and the amount of knowledge      21 you have to have about something beforehand. So      22 typically it's done, if we're adjusting for braking,      23 we go with the second method, which is adjusting the      24 bumper heights.</p> <p>25        Q. Okay. And how do you know how much to</p>	<p style="text-align: right;">Page 100</p> <p>1 stopped, we typically don't lock the brakes up,      2 because it is highly likely that they are going to      3 come off the brake as part of the impact sequence.</p> <p>4        Q. So do you just leave it in neutral or how      5 do you hold it still?</p> <p>6        A. We -- we leave it in neutral, and it's      7 allowed to roll freely on its own.</p> <p>8        Q. So how do you hold it in place before the      9 crash begins?</p> <p>10        A. So our -- our crash test site is very      11 level, as long as we don't lean on the vehicle or do      12 anything, we can park it and it's not going to roll      13 anywhere. Generally, while we're working around the      14 vehicle, we'll have the -- either the emergency brake      15 or the parking brake engaged so that we don't      16 accidentally bump it and move it, and then we'll      17 disengage those brakes right before we run the tests      18 so that everybody's clear, everybody's done working      19 in the vehicle, we'll release the brakes, and it will      20 stay stationary until the impact.</p> <p>21        Q. So if I were to look at another Exponent      22 test with photos documenting the condition of the      23 vehicle before the crash test, it would also show the      24 struck vehicle in neutral with the E-brake on,      25 correct?</p>
<p style="text-align: right;">Page 99</p> <p>1        adjust the bumper heights?</p> <p>2        A. We can be given a number. You can do      3 testing that measures the bumper height during      4 braking, and you can record that number.</p> <p>5        Q. Was that done in this case?</p> <p>6        A. It was not.</p> <p>7        Q. And why not?</p> <p>8        A. I was not asked to do it.</p> <p>9        Q. Okay. Is there a way to account for the      10 driver having her foot on the brake pedal in the      11 Escape? So in our case, the driver had her foot on      12 the brake pedal at the stoplight, and then the wreck      13 happened, how do you recreate that condition in a      14 crash test?</p> <p>15        A. In general --</p> <p>16        Q. Uh-huh.</p> <p>17        A. -- or for a specific -- for a specific      18 case?</p> <p>19        Q. In this case.</p> <p>20        A. In this case, because it's a rear impact,      21 generally, even if your foot is on the brake, an      22 occupant is going to move rearward in the vehicle and      23 their feet tend to leave the pedals, whether that's      24 the brake pedal or the accelerator. So typically for      25 rear impacts, even if someone was on the brakes and</p>	<p style="text-align: right;">Page 101</p> <p>1        A. You mean like any other Exponent crash      2 testing?</p> <p>3        Q. Uh-huh.</p> <p>4        A. If the parameters call for it to be in      5 neutral then yeah it would be in neutral. We do run      6 cases of vehicles in park. We'll put it in drive.      7 It all depends on the parameters we are testing for      8 that particular case.</p> <p>9        Q. The Escape in this crash test had the      10 emergency brake on, correct?</p> <p>11        A. During the impact it did not.</p> <p>12        Q. Okay. And so the pictures show it with the      13 emergency brake on, correct?</p> <p>14        A. Correct.</p> <p>15        Q. Why was it photographed with the emergency      16 brake on?</p> <p>17        A. Because, again, to take those photographs,      18 you've kind of got to get inside and around the      19 vehicle, and so like I said we leave the parking      20 brake or emergency brake on, whatever you would like      21 to call it, and so that as we're working inside the      22 vehicle or around the vehicle, setting up the      23 cameras, setting up the instrumentation, we don't      24 accidentally bump it and move the vehicle away from      25 where we set it up.</p>

<p style="text-align: right;">Page 102</p> <p>1 Q. Do you take a photograph after you release      2 the E-brake to confirm that it was released?</p> <p>3 A. I do not.</p> <p>4 Q. Why not?</p> <p>5 A. Because that would require me being inside      6 the vehicle. Once we release the parking brake, we      7 want to have as minimal interaction with the vehicle      8 as we can.</p> <p>9 Q. Well, you have to get in to release it,      10 right?</p> <p>11 A. Depends on where it's at, but yeah, so      12 we've got to get in to release it and that's the last      13 thing we do and close it up. The longer -- the      14 longer you linger around in there and move around and      15 try and do stuff, the more likely it is you might      16 move the vehicle away from where you want it to      17 impact.</p> <p>18 Q. So it's your testimony, then, that you      19 can't, just before you shut the door, take a picture      20 to confirm that the E-brake was released?</p> <p>21 A. I could have taken that picture, yes, but I      22 did not in this case.</p> <p>23 Q. Let's see -- all right. You have compared      24 the amount of crash in one crash versus another as      25 part of your work in other cases, correct?</p>	<p style="text-align: right;">Page 104</p> <p>1 For example, what I'm trying to get at here, and my      2 question's not going to be artful, but is there a      3 methodology that says, okay, 25 percent in the car,      4 take a measurement, 50 percent through the width take      5 a measurement, 75 and then 100, take a measurement,      6 are those predetermined spots or are you as an      7 engineer just choosing spots to compare?</p> <p>8 A. It -- it kind of depends. There are some      9 papers out there that give a methodology on measuring      10 crush, and the methodology isn't this is the only way      11 to do it or the best way to do it, it's just here's a      12 way to get consistent results. But, ultimately, it's      13 up to the engineer trying to determine the best way      14 to quantify the crush that you're looking at, because      15 every -- every crash is different, every crush      16 structure is going to be different, so you can't      17 necessarily set a single set of parameters or a      18 single methodology for every case that's going to      19 work, so it just depends on what it looks like.</p> <p>20 Q. Do you have one that you default to and      21 then if that doesn't -- if that doesn't seem      22 appropriate use a different one?</p> <p>23 A. No. Not necessarily, no.</p> <p>24 Q. So some of these software programs      25 have -- have a built-in methodology for comparing</p>
<p style="text-align: right;">Page 103</p> <p>1 A. In other cases, yes.</p> <p>2 Q. And how do you do that?</p> <p>3 A. Several different methods. Sometimes      4 it's -- it depends on all the information that I      5 have. Best way to go is either scan data or really      6 detailed photographs, so that I can compare crush      7 from one vehicle to another vehicle. You can bring      8 that into our computer software so that we can      9 measure that crush and make those comparisons.</p> <p>10 Sometimes, depending on how many      11 photographs or the information we have, sometimes      12 it's just a visual -- excuse me -- a visual      13 comparison. It all just depends on the amount of      14 information that's given.</p> <p>15 Q. Okay. How about in this case, where      16 there's scan data of both sets of crash vehicles, how      17 would you compare the scan data to obtain the      18 measurement?</p> <p>19 A. How would I do it?</p> <p>20 Q. Yes, sir.</p> <p>21 A. You could take the scan data and do what's      22 called overlaying, so find common points, and then      23 compare the damage from one set of scans to the      24 other.</p> <p>25 Q. Do you use predetermined slices on the car?</p>	<p style="text-align: right;">Page 105</p> <p>1 crash measurements, correct?</p> <p>2 A. Which softwares are you talking about? Are      3 you --</p> <p>4 Q. My understanding was that with the scan      5 data you could do the overlay that you talked      6 about --</p> <p>7 A. Uh-huh.</p> <p>8 Q. -- and then the software will say, okay,      9 we're going to take this many measurements      10 equidistant from each other and that's just part of      11 the software default?</p> <p>12 A. The software I use doesn't do that.</p> <p>13 Q. Okay. Gotcha.</p> <p>14 So you don't -- you don't go in and try to      15 do it in a uniform way, you just look at it and      16 decide?</p> <p>17 A. I may divide it up uniformly.</p> <p>18 Q. Okay.</p> <p>19 A. But I go in and make those uniform      20 measurements or cuts, you know, whatever terminology      21 you want to use, of comparison.</p> <p>22 Q. Okay. Do you have a certain number of cuts      23 you like to use?</p> <p>24 A. So if I'm going through and measuring that,      25 I'm probably comparing two NHTSA crash tests or an</p>

<p style="text-align: right;">Page 106</p> <p>1 IIH crash test and so I will try and duplicate -- if      2 they made any crush measurements in that report, I      3 may try and duplicate those crush measurements on      4 what I'm working on just so you have similar      5 measurements; however, that doesn't always work,      6 again, because every crash is different, so you can't      7 always do an exact, okay, I'm going to slice it at 10      8 inches from the right and 20 -- you know, you can't      9 always do that. So, again, it really depends on what      10 you're looking at and how you're trying to make that      11 comparison.</p> <p>12 Q. How many cuts does NHTSA use in its crash      13 test?</p> <p>14 A. Their typical frontal crash test makes      15 six -- I believe it is six measurements.</p> <p>16 Q. How about IIHS?</p> <p>17 A. I don't remember off the top of my head.</p> <p>18 Q. Okay. Okay. For the crash test setup,      19 the -- if you could get your report with all the      20 pictures in it, just so you've got that in front of      21 you.</p> <p>22 A. Yup.</p> <p>23 Q. And I'll look at it with you. And I'm      24 going to mark it as Plaintiffs' Exhibit 118.      25 I'll give you a label.</p>	<p style="text-align: right;">Page 108</p> <p>1 What is it that causes the F250 to run into      2 the Ford Escape?</p> <p>3 A. So if you notice the rail running right      4 down the middle there, we have a, what we call a tow      5 shoe. It's essentially a trolley that clamps to the      6 rail and moves down the rail that's driven by a      7 cable. The Ford F250 is then attached to that tow      8 shoe with chains. If you actually look at      9 photograph 227 shows a picture of that setup.</p> <p>10 Q. Okay. We talked about a lot of this with      11 Mr. Grimes, so I'm trying not to -- not to repeat      12 ourselves. The photo 283, if you can look at that      13 with me.</p> <p>14 What is that at the floorboard there?</p> <p>15 A. So that -- that's our brake system. So      16 that is our remote control that we can throw the      17 switch and activate the brakes.</p> <p>18 Q. And was that done in this case?</p> <p>19 A. Post collision it was.</p> <p>20 Q. Post collision?</p> <p>21 A. Correct.</p> <p>22 Q. Why post collision?</p> <p>23 A. Because I've got a vehicle that after the      24 collision is still traveling at a significant rate of      25 speed and I'd like to bring it to a stop before it</p>
<p style="text-align: right;">Page 107</p> <p>1 (Marked for identification Exhibit 118.)</p> <p>2 BY MS. CANNELLA:</p> <p>3 Q. Okay. Can you go to the pictures that show      4 the crash setup before the vehicles are crashed. So      5 it looks like --</p> <p>6 A. So I'm starting at photograph 45.</p> <p>7 Q. Okay. Is that a shortened version of      8 something? Oh, I'm at 226.</p> <p>9 A. Oh, okay. Sorry, my complete setup      10 photographs start at 45, and that shows the      11 individual vehicles and everything we did, under-body      12 photographs and everything else, so --</p> <p>13 Q. Gotcha.</p> <p>14 Okay. Can we fast-forward to 226 and look      15 at the lineup.</p> <p>16 Okay. So if we're correct in understanding      17 the pictures, the intention was for the F250 to be      18 centered over the rail that it's sitting on, correct?</p> <p>19 A. That's correct.</p> <p>20 Q. And then the Ford Escape is supposed to be      21 10.9 inches to the right of center, correct?</p> <p>22 A. That's correct.</p> <p>23 Q. All right. And then the F250 is drug by      24 what into the -- or strike that, I'm sorry.</p> <p>25 What is the F250 moving -- how -- sorry.</p>	<p style="text-align: right;">Page 109</p> <p>1 runs into something else.</p> <p>2 Q. Okay. So in the real collision you      3 wouldn't have as much -- you would have more movement      4 than we saw in the crash test after impact, correct?</p> <p>5 A. Sorry, what do you mean by "movement"?</p> <p>6 Q. Well, in the real collision the driver's      7 foot wouldn't be on the brake after the impact, most      8 likely, correct? We talked about that earlier.</p> <p>9 A. For the Escape or the F250?</p> <p>10 Q. For the Escape.</p> <p>11 A. For the Escape, potentially no.</p> <p>12 Q. And this is the Escape we're looking at,      13 correct?</p> <p>14 A. Correct.</p> <p>15 Q. All right. So in the crash test, the      16 vehicle, the Escape, comes to a stop before you would      17 expect it to in the real crash?</p> <p>18 MR. HILL: Object to the form.</p> <p>19 But go ahead.</p> <p>20 THE WITNESS: Not necessarily. I don't      21 know the -- I don't know exactly when the vehicle      22 came to rest in the subject incident, so I can't tell      23 you whether this one came to a stop earlier or later.</p> <p>24 Did -- did it hit something else after the initial      25 impact that would have stopped the vehicle?</p>

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<p>1 BY MS. CANNELLA:</p> <p>2 Q. No.</p> <p>3 A. Okay.</p> <p>4 Q. I guess I'm not trying to be controversial,</p> <p>5 I'm just saying you guys applied the brakes after</p> <p>6 impact in the Ford Escape, correct?</p> <p>7 A. Right.</p> <p>8 Q. Okay. And if there's no braking in our</p> <p>9 Ford Escape, then the movement after impact would be</p> <p>10 different in our crash?</p> <p>11 A. Potentially.</p> <p>12 Q. Okay. All right. The yellow and black</p> <p>13 tape on the hood of the F250 and Escape, those are</p> <p>14 supposed to indicate center line, correct?</p> <p>15 A. Yes.</p> <p>16 Q. How do you keep the F250 moving in a</p> <p>17 straight line during the crash test?</p> <p>18 A. Yeah, so like I was saying earlier, it's</p> <p>19 attached to the -- it's essentially attached to that</p> <p>20 rail with a set of chains, and they are -- we tighten</p> <p>21 those down as much as we can without constraining the</p> <p>22 vehicle too much, meaning we're not trying to yank</p> <p>23 down on the vehicle, but we want to keep it so that</p> <p>24 it's not moving side to side, and then vehicles</p> <p>25 will -- if you don't put any steering input in a</p>	<p>Page 110</p> <p>1 it was checked and the answer is it's fine?</p> <p>2 A. No.</p> <p>3 Q. So how do we know -- who did that in this</p> <p>4 case?</p> <p>5 A. I can look at the initials of who received</p> <p>6 the F250. So photograph -- photograph 1 of my report</p> <p>7 is documenting the date that the F250 was received,</p> <p>8 and the photographer is "F.S." and that's one of my</p> <p>9 technicians who would have taken this vehicle and</p> <p>10 driven it and photographed it.</p> <p>11 Q. Okay. And is there any video of the</p> <p>12 alignment procedure check?</p> <p>13 A. No. No.</p> <p>14 Q. Okay. Would there any be any documentation</p> <p>15 if you guys did have to do any alignment adjustment?</p> <p>16 A. Yes, if we -- if the alignment needed to be</p> <p>17 changed or adjusted, we would have documentation on</p> <p>18 that.</p> <p>19 Q. Okay. And so we know that it wasn't done</p> <p>20 here because we don't have that documentation; is</p> <p>21 that fair?</p> <p>22 A. That's correct.</p> <p>23 Q. And is there any kind of device you could</p> <p>24 put on the steering wheel to hold it straight?</p> <p>25 A. We could -- we could tie the steering wheel</p>
<p>1 vehicle, it will drive straight down the road so you</p> <p>2 can let go of your steering wheel and it will travel</p> <p>3 in a straight direction. So we rely on the alignment</p> <p>4 of the vehicle to be able to bring it down in a</p> <p>5 straight line.</p> <p>6 Q. Do you do any work on the alignment before</p> <p>7 the crash test?</p> <p>8 A. We check it to make sure that it's not</p> <p>9 pulling left or right prior to that. If it does pull</p> <p>10 left or right we will make some alignment</p> <p>11 adjustments, but in this case, it didn't.</p> <p>12 Q. Where is that paperwork with that analysis</p> <p>13 or that test?</p> <p>14 A. It's not an analysis, it's just a -- it's a</p> <p>15 general -- as we -- when we get the vehicle and we</p> <p>16 check over it, and we take all those -- the receiving</p> <p>17 photographs that we've got in the test report, part</p> <p>18 of that is to -- we move the vehicle to another spot</p> <p>19 on our property out there so that we have a nice</p> <p>20 clean area to take photographs in, and whoever's</p> <p>21 happening to do that driving and take those</p> <p>22 photographs are also checking and feeling to make</p> <p>23 sure the alignment is -- is -- is straight and not</p> <p>24 pulling one way or the other.</p> <p>25 Q. Is there some paperwork they do to say that</p>	<p>Page 111</p> <p>1 down to hold it from moving. That tends to -- we</p> <p>2 don't do that when we're rolling a vehicle straight</p> <p>3 ahead, because if you try and constrain the steering</p> <p>4 wheel perfectly straight, you end up not actually</p> <p>5 constraining it perfectly straight, and then you are</p> <p>6 inducing a steer, potentially minimal, but a minimal</p> <p>7 steer would still be a steer nonetheless.</p> <p>8 Q. What was used to create the added weights</p> <p>9 of the vehicles?</p> <p>10 A. It was a combination of bags full of sand</p> <p>11 and lead bars.</p> <p>12 Q. And are the bags full of sand, like a</p> <p>13 uniform measurement or do you fill them up, weigh</p> <p>14 them, and put them in the car?</p> <p>15 A. We weigh them prior to putting them in the</p> <p>16 car.</p> <p>17 Q. And how much do they each weigh? Is it</p> <p>18 different?</p> <p>19 A. They -- generally, we try and make the bags</p> <p>20 weigh about 50 pounds, but I do have some that are</p> <p>21 55 pounds. I do have some that are 25 pounds. It</p> <p>22 all depends on the amount of ballasts I'm putting in.</p> <p>23 I'll find the right sandbags to fit the amount of</p> <p>24 ballasts that I need.</p> <p>25 Q. And are there any pictures showing them</p>

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1 being weighed to confirm how much they weigh?	1 A. Not that I'm aware of.
2 A. No.	2 Q. Has the second set of vehicles that were
3 Q. Is there any way to confirm what the report	3 purchased been preserved?
4 says about the amount of ballasts and where?	4 A. Yes.
5 A. Yeah, you can ask me about it and I'll	5 Q. Have you discussed doing any additional
6 confirm it for you.	6 testing with Rough Country's lawyers or other
7 Q. Okay. Is there any documentary evidence,	7 experts?
8 aside from your testimony?	8 A. No.
9 A. We've got the -- in the report there's the	9 Q. And we have all your communications from
10 setup photo sheet where we've documented where the	10 Rough Country's lawyers, from the experts, and
11 ballast was placed inside of both vehicles and the	11 internal communications regarding the facts of the
12 amount of ballasts at those locations.	12 case, any assumptions you made, and any amounts you
13 Q. Okay. Can you point me to that picture,	13 were paid in the case?
14 please?	14 A. Yeah, I provided everything -- everything
15 A. Sure.	15 that I had for it, yes.
16 It's part of the test setup tab, and you're	16 Q. Are there some things that you would --
17 looking at what's called the test vehicle ballast	17 that you used to have that you don't currently have?
18 record. So there's one of those for each vehicle.	18 A. No.
19 Q. Okay. So the crash test F250 was ballasted	19 Q. Can you grab your invoices?
20 to get it to 8,533 pounds for the crash test,	20 A. Yes.
21 correct?	21 Q. Plaintiffs' Exhibit -- what number is it?
22 A. That's correct.	22 A. 123.
23 Q. And where did you get that number from?	23 Q. Thank you.
24 A. Mr. Grimes gave me that.	24 And can you take a look at those and see
25 Q. So did you have anything to do with coming	25 the dates -- let us know the dates of the LECs in the
Page 115	Page 117
1 up with that number?	1 case, you mentioned two or three.
2 A. I did not.	2 A. Yeah, so I have a phone call listed on
3 Q. And in the crash test, the Escape was	3 3/27/2023.
4 ballasted up to 9 -- I'm sorry, up to 3,940 pounds	4 Q. And that was two hours, according to your
5 for the test, correct?	5 notes or your bills?
6 A. I have 3,941.	6 A. Sorry, I skipped past it. Give me a
7 Q. 41.	7 second.
8 Okay. And did you do anything to come up	8 Yes, two hours.
9 with that number?	9 Then I have 4/27/2023.
10 A. No.	10 Q. And how long was that one?
11 Q. Those are from Mr. Grimes too?	11 A. An hour and a half.
12 A. Correct.	12 Q. Okay. And who was on that one?
13 Q. One moment.	13 A. I don't remember specifically. I think all
14 Is the crash test in the report that you	14 of -- I think Doc- -- or, sorry, Mr. Grimes and
15 did the only crash test run in the case?	15 Dr. Gwin were on it, along with some of the
16 A. Yes.	16 attorneys.
17 Q. And you're not aware of any other crash	17 Q. Okay. Any others?
18 tests being run?	18 A. Not that I recall.
19 A. No.	19 Q. Okay. You didn't have one after the crash
20 Q. How about any computer simulations done by	20 test was done?
21 Rough Country?	21 A. Oh, in -- sorry, any other conference
22 A. I don't have any knowledge of any other	22 calls?
23 simulations.	23 Q. Yes, sir.
24 Q. And no testing of any kind on behalf of	24 A. Sorry, I thought you meant I any other --
25 Exponent or other parties to the case?	25 any other parties on the call.

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<p>1 Q. That's okay.</p> <p>2 A. So I have another conference call on</p> <p>3 5/5/2023.</p> <p>4 Q. And who was on that one?</p> <p>5 A. I believe the same people.</p> <p>6 Q. After the crash test was done on the 15th,</p> <p>7 did everybody sit down and talk about it?</p> <p>8 A. On a conference call?</p> <p>9 Q. On-site in person.</p> <p>10 A. I don't remember if anyone sat down and had</p> <p>11 a discussion about it. I get very busy right after a</p> <p>12 crash test, because I'm documenting and trying to</p> <p>13 collect almost 500 photographs and get everything</p> <p>14 together. So I was not part of any sit-down</p> <p>15 discussion post test.</p> <p>16 Q. How quickly does everybody get the results</p> <p>17 from the crash test?</p> <p>18 A. So the official report?</p> <p>19 Q. No, like the charts from your report and</p> <p>20 photographs and videos, how long does it take to get</p> <p>21 that stuff?</p> <p>22 A. So we put together -- we try and put that</p> <p>23 together same day for a review, but it's not</p> <p>24 finalized on that same day until I have a chance to</p> <p>25 review everything.</p>	<p>1 BY MS. CANNELLA:</p> <p>2 Q. Was that discussed for this case?</p> <p>3 A. Not that I'm aware of.</p> <p>4 Q. Do you know why you were chosen for the</p> <p>5 project?</p> <p>6 A. I don't know exactly where the</p> <p>7 recommendation came from.</p> <p>8 Q. Did the -- did you ever work with the</p> <p>9 lawyers in the case before this?</p> <p>10 A. I have not.</p> <p>11 Q. Do you do reconstruction testimony?</p> <p>12 A. I do.</p> <p>13 Q. Do you have any idea why you did the crash</p> <p>14 testing in this case, but not the reconstruction?</p> <p>15 A. My understanding is Mr. Grimes was already</p> <p>16 working on the reconstruction side of things.</p> <p>17 Q. Have you ever had a case in Georgia before?</p> <p>18 A. Not that I specifically recall.</p> <p>19 Q. Looked like --</p> <p>20 A. That doesn't mean that I -- doesn't mean</p> <p>21 that I haven't had one before.</p> <p>22 Q. The testimony list you gave looks like it</p> <p>23 was primarily clustered in kind of Arizona, Texas,</p> <p>24 type areas in the western part of the country; is</p> <p>25 that fair?</p>
<p style="text-align: right;">Page 119</p> <p>1 Q. Could you have done the crash test that you</p> <p>2 did in this case using a computer simulation?</p> <p>3 A. Potentially.</p> <p>4 Q. Why do you say "potentially" and not</p> <p>5 definitely?</p> <p>6 A. Because I -- if you wanted to do something</p> <p>7 like this, it would probably take a pretty detailed,</p> <p>8 in-depth, finite element analysis, and that's not</p> <p>9 something that -- I've done some finite element work</p> <p>10 back in school, but nothing to the level of the</p> <p>11 detail that would be required to run this type of</p> <p>12 simulation.</p> <p>13 Q. So in the computer programs that have</p> <p>14 computer models of vehicles --</p> <p>15 A. Uh-huh.</p> <p>16 Q. -- sometimes they have the F250 --</p> <p>17 A. Right.</p> <p>18 Q. -- sometimes they have the Escape --</p> <p>19 A. Uh-huh.</p> <p>20 Q. -- if you had those computer models, could</p> <p>21 you run this crash test in the computer?</p> <p>22 MR. HILL: Object to the form.</p> <p>23 But go ahead.</p> <p>24 THE WITNESS: You could set up the crash in</p> <p>25 the computer model -- in the computer software, yes.</p>	<p style="text-align: right;">Page 121</p> <p>1 A. Correct.</p> <p>2 Q. Is that where most of your work is?</p> <p>3 A. A lot of my reconstruction work, that's</p> <p>4 where it kind of ends up, but my testing work is all</p> <p>5 over. I just happen -- I haven't testified in a</p> <p>6 Georgia case yet.</p> <p>7 Q. Okay. Did you do any videoconferences or</p> <p>8 phone calls with the other experts in the case</p> <p>9 without Rough Country's lawyers present?</p> <p>10 A. No.</p> <p>11 Q. You've worked at Exponent since 2009,</p> <p>12 correct?</p> <p>13 A. 2010.</p> <p>14 Q. 2010.</p> <p>15 All right. Let's put your CV in the</p> <p>16 record. I've marked it as Plaintiffs' Exhibit 113.</p> <p>17 (Marked for identification Exhibit 113.)</p> <p>18 BY MS. CANNELLA:</p> <p>19 Q. Okay. So you left Collision Safety</p> <p>20 Engineering in 2009, and then came to Exponent in</p> <p>21 2010?</p> <p>22 A. That's correct.</p> <p>23 Q. Did you get your master's in mechanical</p> <p>24 engineering while you were working at Exponent?</p> <p>25 A. No, while I was working at Collision</p>

<p style="text-align: right;">Page 122</p> <p>1 Safety.      2 Q. And how long did it take you to get your      3 master's?      4 A. About two years.      5 Q. Did you pay for it yourself or did somebody      6 else?      7 A. I received some scholarships and Collision      8 Safety sponsored me. I believe the agreement was      9 50/50.      10 Q. How many employees did Collision Safety      11 have when you left it?      12 A. I believe they were 15 or 20 individuals,      13 between engineers and support staff.      14 Q. And Collision Safety is a company that      15 provides expert testifiers in the field of accident      16 reconstruction, correct?      17 A. Correct.      18 Q. Did you work for automakers when you were      19 at CSE?      20 A. Yes.      21 Q. And did you do mostly plaintiffs or defense      22 work?      23 A. It would be mostly defense work, but we did      24 have some plaintiff cases as well.      25 Q. And what was the breakdown percentagewise?</p>	<p style="text-align: right;">Page 124</p> <p>1 Q. Why did you leave CSE and go to work at      2 Exponent?      3 A. Couple of factors: The economy at that time      4 was low and so the amount of work that Collision      5 Safety had was decreasing. So I was concentrating on      6 finishing up my master's, and when I completed my      7 master's, I was looking for other employment to make      8 sure that I would have a job.      9 Q. And then any other factors?      10 A. No, that's really the main one. The      11 economy kind of slowing down I think hurt a lot of      12 people; me included.      13 Q. Did somebody recruit you?      14 A. No, I reached out to Exponent.      15 Q. And who did you know at Exponent before you      16 started working there?      17 A. So one of the other engineers at Collision      18 Safety had worked at Exponent prior to working there,      19 and he recommended that I reach out to Exponent to      20 see if they were hiring at all.      21 Q. Did you do a scan of the crash test      22 vehicles before or after the test?      23 A. I did not.      24 Q. Did anybody?      25 A. I believe Ann Grimes -- I know she scanned</p>
<p style="text-align: right;">Page 123</p> <p>1 A. Oh, I don't -- I don't remember, I wasn't      2 one of the testifiers at the time. I was one of the      3 support engineers.      4 Q. And when CSE performed crash tests, what      5 facilities did it use?      6 A. So they have a -- they have a small crash      7 test facility similar to our crash rail, but much      8 shorter and narrower. So the capabilities that they      9 have were much -- much more narrow. But they do have      10 a test facility that we would perform testing at.      11 Q. So if you needed something bigger, would      12 you go somewhere else?      13 A. Yes.      14 Q. And where did CSE experts usually go to?      15 A. We typically went to Exponent or Calspan or      16 MGA.      17 Q. Calspan's in New York, correct?      18 A. They've got -- yes, I think their main      19 office is in Buffalo, maybe, but they've got a few      20 others, I believe.      21 Q. Not in California, as one might think?      22 A. Not in California, as one might think.      23 Unless they've purchased something recently.      24 Q. Not to my knowledge.      25 A. I don't think so.</p>	<p style="text-align: right;">Page 125</p> <p>1 post test, I can't remember off the top of my head if      2 she also scanned the vehicles pre test.      3 Q. Is that normally something other experts      4 will do or that you will do?      5 A. It's a mix. It depends on what we're      6 requested. Sometimes I'll do it as part of the test,      7 and sometimes they'll want the actual experts who are      8 going to be testifying about it to come in and do      9 their own scans.      10 Q. Okay. Do you agree -- or strike that.      11 Let's look back at the report. When you      12 get a vehicle in -- when Exponent receives a vehicle,      13 walk me through that process. It comes in and then      14 what happens?      15 A. It comes in -- so depends on where we      16 bought it from or how it gets delivered to our      17 facility. Usually it comes in on either a tow truck      18 or a car hauler, depending on where we had to      19 purchase it from and get delivered. It gets dropped      20 off. We verify, first of all, that it is the car      21 that we purchased because I'd hate to receive a      22 vehicle that we didn't buy.      23 So we verify VIN. We verify that it is in      24 the condition that we expected it to be in. It's      25 good, there's no -- there's no damage. There's no</p>

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1 significant rust or anything else that's going to 2 affect the structure of the vehicle.  3 We then take the photographs, fill out that 4 receiving form as part of the test documentation that 5 grabs the weights and -- and all of the other 6 information we get on the receiving form itself. 7 Once that's complete, then my technicians are looking 8 to me to guide them as to where to start in their 9 vehicle preparations.	1 Q. All right. And then the vehicle receiving 2 summary, I wanted to go through that for the F250. 3 The GVWR, that's -- is it the maximum weight that the 4 vehicle's supposed to operate at? 5 A. Gross vehicle weight rating, yes. 6 Q. Okay. And then what's the front GAWR? 7 A. That's the gross axle weight rating. 8 Q. And then the rear? 9 A. Same thing. Gross axle weight rating, 10 GAWR. 11 Q. So if you add those together, it's more 12 than a thousand -- 10,000 -- or it's more than 10,000 13 pounds, correct? 14 A. Correct. 15 Q. So how does that work? 16 A. That's -- that's from the manufacturer, so 17 you can load -- you can load either axle up to their 18 axle weight rating or you can load the total vehicle 19 up to the total vehicle weight rating. But you can't 20 exceed any of those numbers. So in this case, with 21 this rating, you can't load both the front and rear 22 axle up to their maximum weights because that would 23 exceed the maximum weight of the vehicle overall. 24 Q. And then it says that the running boards 25 were removed, did you replace them with OEM equipment
1 Q. Okay. Do you do it the second time? 2 A. No. 3 Q. And why not? 4 A. It's documented in the test report. I 5 won't say I haven't done it before, it just depends 6 on requests from experts or the client as to whether 7 they want an actual picture of the scale. Some 8 people are picky about it, some people don't -- 9 the -- so whether there's a picture of it or not it 10 kind of just depends, but the weights are recorded in 11 the test report, both the received weights and the 12 as-tested weights.  13 Q. Did anybody tell you to photograph the 14 weights in this case? 15 A. No. 16 Q. Did anybody tell you not to photograph the 17 weights in this case? 18 A. No. 19 Q. Okay. So getting into your report, it's 20 not -- pages are not numbered, so bear with me. The 21 impact configuration, did you draw this? 22 A. I did. 23 Q. And that shows the F250 center-lined with 24 the rail? 25 A. Correct.	1 or just remove them or how does that work? 2 A. They were aftermarket running boards, so we 3 just removed them. 4 Q. And there was nothing then that would 5 normally go in their place? 6 A. No. 7 Q. Okay. So the vehicle was as it is, 8 standard? 9 A. Correct. 10 Q. Okay. And then do you know if the subject 11 vehicle in the subject wreck had running boards, the 12 F250? 13 A. I don't recall specifically. 14 Q. Okay. I don't either. I'm just asking. 15 All right. Now, vehicle weights as 16 received with max fluids. 17 What is "max fluids"? 18 A. So we'll make sure that -- we'll make sure 19 that it's got all its engine oil, it's got washer 20 fluid, the gas tank is full, radiator is full, so 21 that you get, essentially, the vehicle weighed in an 22 as-operating condition. 23 Q. Okay. So this is after you've taken all 24 the fluids out and then put in the Stoddard fluid? 25 A. No. So this -- this is before we remove
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<p>1 anything or start anything, we make sure all the      2 fluids -- this is part of our just receiving as it      3 comes in. We make sure all the fluids are topped      4 off, that it's not low on something. Typically these      5 are not going to show up with a full tank of gas.      6 Most dealerships aren't going to give you \$200 worth      7 of gas. I don't know why. They want to make as much      8 money as they can.</p> <p>9 So we typically have to, then, fill the gas      10 tank up. So we'll fill it up, make sure all the      11 fluids are full, put it on the scales, weigh it as      12 is.</p> <p>13 Q. What's the purpose of that?</p> <p>14 A. So that we have documented exactly how we      15 received it with the -- with the accessories that may      16 or may not be on it, the exact trim level that was      17 purchased. The wheels and tires, if it happened to      18 come with different wheels and tires on it and not      19 the OE ones, we would have a documentation of      20 everything that's on there.</p> <p>21 Q. Then do you take all those fluids out?</p> <p>22 A. We do.</p> <p>23 Q. Okay. Do you reuse them?</p> <p>24 A. We don't. We recycle.</p> <p>25 Q. Oh, that's good.</p>	<p>1 track?      2 A. So rear track and front track is      3 referencing the spacing between the left and the      4 right rear -- right -- excuse me, the left and the      5 rights wheels, and that's measured at the center line      6 of the wheels.</p> <p>7 Q. Okay. So those weights that we just looked      8 at with the max fluids don't really have anything to      9 do with the weight of the test vehicle right before      10 the test?</p> <p>11 A. Correct.</p> <p>12 Q. Okay. Let's go to the test setup page.</p> <p>13 Okay. So we've got the vehicle crash test      14 condition for the F250 and the modifications here.      15 Can you walk us through these, the left and right      16 lower sub-frame, what is that?</p> <p>17 A. Yeah, so that -- the category that we're      18 listing there is the tow shoe location. As we -- as      19 I kind of described earlier, our tow system involves      20 that tow shoe. And that's where we're going to      21 attach the tow shoe to the vehicle is the left and      22 the right lower sub-frame or the engine cradle.      23 There are several different names you could go with,      24 but that's the attachment of the vehicle down to the      25 crash rail.</p>
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<p>1 How do you do that?</p> <p>2 A. So we have recycle bin for, and it's a      3 liquid storage bin for oil and radiator fluid. We      4 store the fuel separately, so that, for instance,      5 when we do need to fill it up, we don't put brand-new      6 fresh gas in if we know we're just going to drain it      7 right back out, we'll put old, recycled gas in there.</p> <p>8 Q. Got it.</p> <p>9 A. So that we're not -- we try to be as -- and      10 we try to not waste as much as we can.</p> <p>11 Q. What are the vehicle attitude measurements?</p> <p>12 A. So that's -- that's as it sits in its      13 as-received condition, we go along and we measure the      14 height of the wheel well at every single wheel. So      15 that's why it's listed as "left front," "left rear,"      16 "right front," "right rear," and that's a measurement      17 from the top of the wheel well down to the ground.</p> <p>18 Q. Okay. And then these front bumper height      19 measurements, where are those taken from for each      20 item?</p> <p>21 A. So those are -- those are taken right at      22 the top of the front bumper. As it, again, similarly      23 as it -- as it sits with its full fluids.</p> <p>24 Q. Okay. And so then the top of the rear      25 bumper and then how about the rear track and front</p>	<p>1 Q. Is the vehicle weight on this page?</p> <p>2 A. Yes.</p> <p>3 Q. And where is that?</p> <p>4 A. It's just up above it, kind of second      5 section it says, "Vehicle test weight."</p> <p>6 Q. Okay. And when do you take that test      7 weight?</p> <p>8 A. Again, this weight is taken after      9 everything, all the test preparations are completed,      10 it's ballasted, it has instrumentation, it's got the      11 tow system on it. We then take a final test weight      12 just before we test it.</p> <p>13 Q. Okay. So it would reflect all the, like      14 you said, the tow shoe and the instrumentation?</p> <p>15 A. Correct.</p> <p>16 Q. Okay. And you -- that 8533, that was the      17 goal weight that Mr. Grimes gave you?</p> <p>18 A. That would have been the weight that      19 Mr. Grimes gave me, yes.</p> <p>20 Q. Okay. All right. What are the event flash      21 locations?</p> <p>22 A. So event flash is for the videos. We put      23 some very bright strobe flash bulbs on the vehicle      24 that will flash at the point of contact between the      25 vehicles. And that helps to sync up the cameras.</p>

1       Q. I assume that when you're figuring out how 2 many sandbags to use you have an idea of how heavy 3 all the instrumentation is, correct?  4       A. Correct.  5       Q. And so what do you -- how many pounds does 6 the instrumentation account for generally?  7       A. Off the top of my head, I'm not quite sure. 8 So when we -- when we do the ballasting, maybe this 9 will help answer the question, when we do the 10 ballasting the instrumentation is on there already. 11 So ballasting is usually one of the last things we 12 do. We've got instrumentation on it, we've got the 13 tow system on it, we've got the braking system 14 already installed, so that I already know that 15 weight's accounted for and then I just need to add 16 the proper ballast in the proper locations in order 17 to get up to the -- to the requested weight.  18       Q. How many different sets of these -- of 19 equipment do you have for different cars? So does 20 Exponent have like a bunch of transducers, a bunch of 21 the cameras, a bunch of the flash devices?  22       A. We do.  23       Q. Okay. So this is all set up, like, a month 24 before the test is run?  25       A. It's usually just a couple of days before	Page 134  1       you that they were almost done with the test -- with 2 the test setup. 3       Q. Okay. The -- I want to be clear on this -- 4 the second -- the first set of vehicles -- strike 5 that. 6              The Escape was purchased, one on April 10th 7 and one on April 13th. The one purchased on 8 April 13th has a sunroof. The one purchased on 9 April 10th does not; is that correct? 10       A. Correct. 11       Q. Okay. And so my question to you earlier 12 was why not use the Escape with the sunroof for the 13 crash test, and I thought your response was because 14 the one without the sunroof was mostly prepped by the 15 time we bought the second Escape. 16       A. No. Sorry. 17       Q. Okay. Can you explain that to me? 18       A. Yeah. No, so -- so what I was trying to 19 explain earlier was that the first vehicle we 20 purchased, we started on that prep work, and so we 21 were further along on that prep than when we 22 purchased the second one. How far along in those 23 three or four days before we got the next vehicle, I 24 don't know exactly where we would have been at in the 25 preparation, but we started with that vehicle as our
Page 135  1       the test is run. But it depends on our schedule, and 2 when my guys have time. Because we are running 3 testing kind of continuously. And every test 4 requires a different set of instrumentation. So they 5 may have a free couple of hours the week before, and 6 so they'll start setting it up, if they have the 7 information from me to be able to do that.  8       Q. Okay. Can we tell from the documents here 9 when they did all the -- all the setup for this?  10       A. No, the exact date of when a specific 11 accelerometer was installed in the vehicle is not 12 recorded, no.  13       Q. Or when they finished, for example? 14       A. No.  15       Q. Okay. But it's your testimony that this 16 was mostly done by the time the second set of 17 vehicles was purchased on April 13th, correct?  18       MR. HILL: Object to the form.  19       THE WITNESS: No, not necessarily.  20       BY MS. CANNELLA:  21       Q. Oh, that's what I understood you to say 22 earlier. No?  23       A. No, we started the prep on it and we would 24 have gotten as far as we could depending on their 25 time frame and their availability, but I can't tell	Page 135  1       number one vehicle, and so that was the vehicle we 2 just continued on through as our first 3 crash -- excuse me -- our first crash test vehicle. 4       Q. But both vehicles were fully prepped by the 5 date -- by 5/15, correct, except for instrumentation 6 was in one? 7       A. The Escape was prepped, ready to receive 8 the instrumentation and the brake system and that 9 stuff, but it was not on the vehicle, it hadn't been 10 ballasted yet, because we hadn't been able to 11 transfer that equipment. 12       Q. So I guess that's what I'm getting at, 13 if -- what's the -- what's the difference in the prep 14 by April 13th that's so compelling that you would use 15 an Escape without the sunroof instead of the one 16 that's like the crash -- the subject vehicle? 17       MR. HILL: Object to the form. 18       But go ahead. 19       THE WITNESS: I don't know that it was so 20 compelling that we were limited from using that -- 21 that vehicle. It was a -- we received one vehicle 22 first, we prepped that, that was our first test 23 vehicle. When we got the second one, we started 24 partially prepping that one so that we were ready to 25 run that as a second test. From my understanding

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<p>1 from Mr. Grimes, the sunroof was not an issue one way          2 or the other in this particular case, because of the          3 rear impact nature of the test.</p> <p>4 BY MS. CANNELLA:</p> <p>5 Q. Was there ever a conversation with          6 Mr. Grimes or anyone else in which you said we've got          7 these two vehicles, one with the sunroof, one          8 without, do you have a preference of which one we use          9 first?</p> <p>10 A. That may have been a discussion during some          11 of our phone calls. I don't specifically recall          12 that -- that portion of the conversation.</p> <p>13 Q. Has anyone expressed confusion about why          14 the Escape was used that didn't have the sunroof?</p> <p>15 A. What do you mean by "confusion," I guess?</p> <p>16 Q. I mean, has anybody been irritated with          17 Exponent for using a vehicle that's not like the one          18 in the crash test when they had one like the crash --          19 I'm sorry, strike that.</p> <p>20 Has anyone been irritated with Exponent for          21 using the vehicle without the sunroof when the          22 subject vehicle did have a sunroof and Exponent had          23 access to one with a sunroof?</p> <p>24 A. Yeah, not that I know of.</p> <p>25 Q. Okay. So do you know how heavy the</p>	<p>1 Q. All right. And then the seatback angles,          2 were those given to you by Mr. Grimes?</p> <p>3 A. So those would have just been -- the          4 request was to just place them in a, for lack of a          5 better term, a normal position, you know, not leaned          6 back, not way upright, because there were no          7 occupants in the vehicle, so we set the fore/aft at          8 just middle position, and then set the seatback angle          9 at something that generally looked like a normal          10 seating position.</p> <p>11 Q. So you don't have a standard for normal          12 seating positions at Exponent?</p> <p>13 A. Not for -- not for something like this, no.</p> <p>14 Q. For anything?</p> <p>15 A. Well, there's protocols that do call for          16 specific seating positions, and that's usually you          17 provide the seating position from the -- it's what's          18 called the manufacturer's recommended seat position.</p> <p>19 Q. Okay. And was that used here?</p> <p>20 A. It was not.</p> <p>21 Q. Okay. All right. The ballast record for          22 the F250, there's 155 pounds on the front floorboard,          23 correct, between the two sides?</p> <p>24 A. So between left and right?</p> <p>25 Q. Yes, sir.</p>
Page 139	Page 141
<p>1 transducers are off the top of your head, roughly?</p> <p>2 A. The accelerometers are fairly light.</p> <p>3 They're pretty small. There are some photographs in          4 the test report. My estimate would be maybe a pound          5 or two.</p> <p>6 Q. Oh. And the cameras and the flashes,          7 probably similar?</p> <p>8 A. Yeah.</p> <p>9 Q. The tow shoes, how heavy are those?</p> <p>10 A. So it's not the tow shoe itself, but the          11 chains and stuff that are on there. I don't          12 specifically recall how much we had to add as far as          13 the structure there and then the chains, but I mean,          14 it's a typical chain, maybe 10, 20 pounds.</p> <p>15 Q. Okay. And then it says the fuel tank level          16 is empty when you run the test; is that right?</p> <p>17 A. Uh-huh.</p> <p>18 Q. You don't put that fake fluid in it?</p> <p>19 A. In this case, no.</p> <p>20 Q. And why is that?</p> <p>21 A. Because we weren't -- this wasn't a fuel          22 system test. We try and spill as little as possible          23 if it's not important for the --</p> <p>24 Q. Okay.</p> <p>25 A. -- the testing that we are running.</p>	<p>1 A. Yes.</p> <p>2 Q. And why is there a difference between left          3 and right like that?</p> <p>4 A. To try and match not only front to rear,          5 but your left-to-right distribution to try and make          6 things as uniform as possible. And I've got to look          7 at the photographs to see, I can't remember if we put          8 the braking system in our left front floor or if we          9 put it somewhere else in the vehicle, but that can          10 sometimes dictate how much ballast we add to an area,          11 because there's already some equipment there so that          12 kind of accounts for some weight and some space          13 that's taken up.</p> <p>14 Q. How much does the -- does the braking          15 system weigh?</p> <p>16 A. Between the canister and the solenoid          17 valves, maybe -- maybe 20 pounds.</p> <p>18 Q. And then you've also got weights on the          19 seats, correct?</p> <p>20 A. Yes.</p> <p>21 Q. Okay. There's more weight on the passenger          22 side than the driver's side, correct, if you add the          23 floor and the seat?</p> <p>24 A. Of just the front area?</p> <p>25 Q. Yes, sir.</p>

<p style="text-align: right;">Page 142</p> <p>1 A. Yes.</p> <p>2 Q. Why is that?</p> <p>3 A. Off the top of my head, I don't -- I don't</p> <p>4 know.</p> <p>5 Q. Okay. Did these numbers come from</p> <p>6 Mr. Grimes or are these numbers that you decided on</p> <p>7 or --</p> <p>8 A. These specific numbers are ones that I</p> <p>9 worked on to match the numbers that would have been</p> <p>10 given to me by Mr. Grimes, which is not the specific</p> <p>11 ballast number and location, but the overall test</p> <p>12 weight.</p> <p>13 Q. Okay. So he gave up the 8,533?</p> <p>14 A. Correct.</p> <p>15 Q. And you figured out where to put</p> <p>16 everything?</p> <p>17 A. And the distribution number. So the fact</p> <p>18 that the -- so if you look at -- back to the vehicle</p> <p>19 crash test condition --</p> <p>20 Q. Uh-huh.</p> <p>21 A. -- the 8,533, and then that distribution</p> <p>22 percentage of 5,842, so you've got a certain amount</p> <p>23 in the front area and a certain amount in the back,</p> <p>24 those would have been numbers that Mr. Grimes would</p> <p>25 have given me and then I try and match that as best I</p>	<p style="text-align: right;">Page 144</p> <p>1 percentage and the right total weight.</p> <p>2 Q. Do you agree that heavier cars cost</p> <p>3 more -- sorry, strike that.</p> <p>4 Do you agree that heavier cars cause more</p> <p>5 crash damage, all things being equal?</p> <p>6 MR. HILL: Object to the form.</p> <p>7 Go ahead.</p> <p>8 THE WITNESS: Potentially, yes.</p> <p>9 BY MS. CANNELLA:</p> <p>10 Q. I want to talk about the camera setup.</p> <p>11 Okay. Did you bring with you today</p> <p>12 Exponent's training or guidance on setting up</p> <p>13 cameras?</p> <p>14 A. We don't have any written training or</p> <p>15 guidance on that.</p> <p>16 Q. And do you use any established methodology</p> <p>17 when you set up cameras?</p> <p>18 A. I mean, we generally set them up how crash</p> <p>19 tests have been set up for decades. Typically you</p> <p>20 want to have an array of cameras covering as many</p> <p>21 angles as you can so that you can record the crash</p> <p>22 from as many angles as you can.</p> <p>23 Q. And are the photos and videos that you</p> <p>24 generated reliable for the jury to rely upon?</p> <p>25 A. Yes.</p>
<p style="text-align: right;">Page 143</p> <p>1 can.</p> <p>2 Q. Is it odd to put more weight on the</p> <p>3 passenger side, when there was no passenger in the</p> <p>4 wreck?</p> <p>5 A. Not necessarily. That could have been</p> <p>6 where the fuel tank was, and if you've got</p> <p>7 30-something, I can't remember how big the fuel tank</p> <p>8 was on this, but I believe it was 30-something</p> <p>9 gallons of fuel. If that's on the left side of the</p> <p>10 vehicle, you may want to kind of bias that way as if</p> <p>11 the fuel tank was full, because it's now empty or if</p> <p>12 it's on the right side, we would maybe bias that way.</p> <p>13 Essentially trying to account for the fact that you</p> <p>14 can't drive down the road with a tank that's drained.</p> <p>15 It wouldn't get very far.</p> <p>16 Q. Do you -- do you know what your thinking</p> <p>17 was, sitting here today, on the division of left or</p> <p>18 right ballast?</p> <p>19 A. I don't remember exactly, no.</p> <p>20 Q. Okay. All right. You had about -- you had</p> <p>21 exactly 700 pounds in the truck bed, correct?</p> <p>22 A. Uh-huh. Yes.</p> <p>23 Q. And how did you come up with that, is that</p> <p>24 just to get to the right percentage?</p> <p>25 A. That would be to get to the right</p>	<p style="text-align: right;">Page 145</p> <p>1 MR. HILL: Object to the form.</p> <p>2 But go ahead.</p> <p>3 THE WITNESS: Yes, to -- to the degree of</p> <p>4 which they were set up for, you can rely on them for</p> <p>5 their -- their designated purpose.</p> <p>6 BY MS. CANNELLA:</p> <p>7 Q. Which is?</p> <p>8 A. A visual representation of -- of the</p> <p>9 interaction between the vehicles.</p> <p>10 Q. Okay. Is that -- is that narrower than</p> <p>11 just relying on them?</p> <p>12 A. Well, in some cases we will specifically</p> <p>13 set up cameras to then do not just a visual, we want</p> <p>14 to see what happened, we may actually do some video</p> <p>15 analysis with the cameras where you can actually take</p> <p>16 the video and make certain measurements or estimates</p> <p>17 of deformations or speeds or angles or anything like</p> <p>18 that.</p> <p>19 Q. With photogrammetry you're talking about?</p> <p>20 A. Photogrammetry or -- or some video tracking</p> <p>21 software that's available.</p> <p>22 Q. Did you set up videos in this crash test to</p> <p>23 be able to take measurements?</p> <p>24 A. These videos were not specifically set up</p> <p>25 for -- to do those measurements in this case.</p>

1       Q. And why not? 2       A. The cameras were requested to be put there 3       as a -- as a visual only. 4       Q. Okay. And what would you have done 5       differently to be able to take measurements? 6       A. There's a couple of things. We do 7       not -- we don't do them all every time, it just 8       depends. But we may have had different marker boards 9       on the ground. We may have also done what's called a 10      camera calibration where you take a known grid or 11      kind of photo set and you record that and then you 12      can use that in the software to understand your 13      distortion in the camera. All lenses, you know, have 14      some distortion, because we're trying to make a 15      square image with a round lens, so you can get some 16      lens distortion, and if you set it up correctly and 17      do some stuff preliminarily you can eliminate that or 18      reduce that distortion, I should say. 19       Q. Okay. And so is there distortion in the 20      photos and videos that you took? 21       A. Yes. 22       Q. Okay. So how can the jury know how to 23      assess that distortion? 24       A. So specifically for -- for, like, the 25      photos that I take, even on a still camera there's	Page 146	1       But go ahead. 2       THE WITNESS: It may reduce some of the 3       unknowns, but you'd have to still trust that the 4       scale is calibrated or not. 5       BY MS. CANNELLA: 6       Q. Do you use photographs to draw conclusions? 7       A. I do sometimes, yes. 8       Q. And do you agree that the experts in this 9       case used the photographs and the videos to draw 10      conclusions, correct? 11       MR. HILL: Object to the form. 12       Go ahead. 13       THE WITNESS: I provided them with the 14      photos and the video. I'm assuming they're going to 15      use it to -- in their reports and analysis. 16       BY MS. CANNELLA: 17       Q. And that's the purpose of taking the 18      photos, so that everybody can rely on them, correct? 19       A. That is correct. 20       Q. Was a receiver hitch removed on the Escape? 21       A. Yes. 22       Q. Do you have photos of the starting 23      condition of that Escape? 24       A. Yes. 25       Q. Okay. And where are those?	Page 148
1       some lens distortion that's in all cameras. So 2       that's why specifically in some of the important 3       measurements that we've got there's an actual tape 4       measure in the photograph, because the tape measure 5       is the tape measure, so we'll take that. As far as 6       the video cameras in this case go, we didn't -- we 7       weren't planning on using those to try and do any 8       type of measurement work, and so there was no 9       calibration performed on those cameras. 10       Q. The yellow and black tape on the 11      vehicles -- 12       A. Uh-huh. 13       Q. -- can act as a measuring stick, correct? 14       A. It can, yes. 15       Q. Okay. The -- let's see, one of the reasons 16      to take pictures and videos is so that someone else 17      can repeat the test if they want to, correct? 18       A. That would be correct. 19       Q. All right. And would you agree that if you 20      have a question of a vehicle on a scale and you take 21      a -- sorry, strike that. 22       Would you agree there's no question of how 23      much a vehicle weighs if there's a picture of the 24      vehicle on the scale and a picture of the scale? 25       MR. HILL: Object to the form.	Page 147	1       A. They would be in the receiving photographs 2       here at the front. So photographs 24 through 44 3       would be the as-received photographs. 4       Q. Okay. So those are the best pictures you 5       have of the tow hitch? 6       A. Correct. 7       Q. Okay. All right. Back to the camera 8       setup. 9       A. Okay. Let me see if I can find it. Before 10      those. 11       Q. Before these? 12       A. Before those. 13       Q. Is there a reason you guys don't number 14      these things? 15       A. Well, we rarely look at them printed out. 16      It's usually electronic, which has the page number at 17      the top of your Adobe reader. 18       Q. Okay. 19       A. So, yes, it does make it less convenient 20      when we print out hundreds of pages. 21       Q. That's all right. 22       Okay. So the camera setup, we've got one 23      directly at center line above the vehicles and 3 feet 24      before impact, correct? 25       A. Correct.	Page 149

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1 Q. That's the video or the camera, what is 2 that? 3 A. You're talking about the overhead camera? 4 Q. Yes, sir. 5 A. Camera number six? 6 Q. Yes, sir. 7 A. So, yeah -- so that is an overhead camera 8 that we've got up on a boom that's looking down at 9 the vehicles, and the measurements that we give those 10 are, in this particular instance, an approximation of 11 where the location of that camera is when we set it 12 up. 13 Q. What is HSV? 14 A. High-speed video. 15 Q. And when you say "approximation," what do 16 you mean by that? 17 A. Well, so for the other cameras that are on 18 the ground, we can actually take a tape measure out 19 there and very nicely measure the location of that. 20 When we've got a camera that is 25 feet in the air, 21 we do our best estimate as to determine the location 22 of that camera relative to the impact location. 23 Q. Okay. So as far as -- the best that you 24 guys could tell, the wide overhead view, camera 25 number 6, was directly at center line, but 3 feet --	1 based on. Like, I don't see that in the video, so 2 how can we know that that is the case? 3 A. So if you look at the video and you look at 4 some of the different levels of vehicle structures, 5 and you look at the different levels of the tape, so 6 for instance, the -- like you had talked about, the 7 yellow and black tape that's along the center line of 8 the vehicle, if you look at the center line of the 9 hood of the F250 and then the center line of the roof 10 of the F250, which are now at different height 11 elevations, those two lines do not line up. 12 But the pre-test photographs -- excuse 13 me -- pre-test photographs from the ground you can 14 clearly see that those tape lines do line up 15 physically on the vehicle, therefore, in order to do 16 that, it means that our camera induced, likely some 17 what's called parallax, which is the as items in a 18 field of view are at different distances from the 19 lens or from the camera, they can appear to be either 20 misaligned or they can appear to be aligned when in 21 reality they are not. 22 Q. And there's no way to quantify how much 23 misalignment there is, correct? 24 A. Not based on the camera as it currently 25 sits.
Page 151	Page 153
1 3 feet after impact, correct? 2 A. Correct. 3 feet over top of the Escape. 3 Q. Okay. Wait, let me make sure I understand. 4 So from the ground, 3 feet from the ground? 5 A. No, no, no. So if you -- so if you -- if 6 your zero reference is at the point of where the F250 7 and the Escape are going to make first contact and 8 center line of the rail, then that camera was 3 9 feet -- approximately 3 feet, what I'll call 10 downstream, which is going to put it over the top of 11 the Ford Escape, because the zero is the Ford 12 Escape's bumper. 13 Q. Got it. 14 A. I will say after looking at the video, it 15 does appear that we probably weren't directly over 16 the rail left to right. So we did the our best to 17 center the camera over the center of the rail, but 18 we're not likely directly over that. 19 Q. And why do you say that? 20 A. Because there's a little bit of distortion 21 and you can kind of look at the overhead video and 22 you can start to tell which direction the camera may 23 have been slightly moved or which direction the 24 camera was angled. 25 Q. And tell me everything that that opinion is	1 MS. CANNELLA: Okay. Can we go off the 2 record? 3 THE VIDEOGRAPHER: Sure. We're going off 4 the record. The time is 12:14. 5 (Recessed from 12:14 p.m. until 12:33 p.m.) 6 THE VIDEOGRAPHER: We're back on the 7 record. The time is 12:33. 8 BY MS. CANNELLA: 9 Q. Okay. Mr. Crosby, we're going to look at 10 the crash test -- oh, thank you. I'll try that 11 again. 12 Okay. Mr. Crosby we're going to look at 13 the crash test that you did, and it's going to be on 14 the screen in front of you, and I will hand you my 15 computer so you can make annotations on it. And let 16 me just show you how to do that. 17 So this is -- you can hit the space button 18 to play or pause and if you want to annotate you can 19 click on wherever the little annotate button is over 20 here, you see the little editor? 21 A. That guy with the draw? 22 Q. Yeah, let's do this, though, so you can 23 actually see it. 24 Okay. So you can just go ahead and hit 25 play with the space button and we can -- I think it

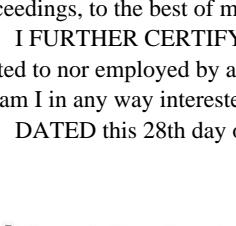
<p>1 will get to that overhead.      2 Did space not work? No?      3 MR. HILL: Click the play button, maybe.      4 THE VIDEOGRAPHER: There we go.      5 BY MS. CANNELLA:      6 Q. It's just kind of hard to navigate with      7 that Zoom in play. There you go. You can pause it      8 with the space button. It should work now?      9 A. There, it did work.      10 Q. Great.      11 Okay. So that's the side view. I think      12 the next one is an overhead, I'm hoping. No.      13 Okay. Have you looked to see if there's      14 any distortions in any of the other views?      15 A. Yes, but generally all -- all of the videos      16 are going to have some distortion, whether it's      17 noticeable or not is kind of depends on where you're      18 looking at in the video.      19 Q. Have you looked at any of the other views      20 to see if there's a significant distortion that would      21 make a difference for the case?      22 MR. HILL: Object to the form.      23 Go ahead.      24 THE WITNESS: Yes, I've looked at all      25 the -- all the views, and there are small distortions</p>	<p>Page 154</p> <p>1 to be that the reason it looks that way is because      2 the camera is not directly over the center of the      3 rail?      4 A. Likely, yes.      5 Q. All right. And can you tell us how -- what      6 that opinion's based on?      7 A. So if you take a look at, as I was      8 explaining before --      9 Q. Uh-huh.      10 A. -- the line that you can see on the F250      11 hood versus the line that you can see on the roof of      12 the vehicle. In this view, with where the camera's      13 set up, those two lines are not lined up. They are      14 offset from each other. So if we assume -- if we're      15 going to try and draw a conclusion based on an offset      16 nature, that would say that the roof of my vehicle is      17 now offset from the hood of my vehicle, which is not      18 true, because the hood and the roof are aligned.      19 We didn't make any changes to the hood or      20 the roof prior to the test. So if we just do -- if      21 we try and do that analysis with this video as it      22 sits, we would come up with a conclusion that's not      23 correct. So -- and in the same way, you can't look      24 at the line on the -- the roof of the vehicle or the      25 line on the hood of the vehicle and try and line that</p>
<p>1 usually around the edge of the -- the camera lines      2 are not always perfectly straight or line up. But      3 again, these views were generally showing the overall      4 visual of the crash test and not necessarily set up      5 to do any specific analysis.      6 BY MS. CANNELLA:      7 Q. Okay. So like in that one, do you see any      8 distortions?      9 MR. HILL: Object to the form.      10 THE WITNESS: Specifically, no, in the      11 impact area, I don't.      12 BY MS. CANNELLA:      13 Q. Okay. Yeah, if you want to click around      14 and get to the overhead, that's fine by me.      15 A. Okay. Yeah, we can move to the other one,      16 so --      17 Q. There we go.      18 Okay. Can you pause it?      19 Okay. So, like, right there you would      20 agree that there appears to be -- the F250 appears to      21 be off-center from the center of the rail, correct?      22 MR. HILL: Object to the form.      23 THE WITNESS: In this case, visually, yes.      24 BY MS. CANNELLA:      25 Q. Okay. And do I understand your testimony</p>	<p>Page 155</p> <p>1 up with the rail, because again, they're at different      2 elevations and as you get different elevations in      3 height, the angle of the camera becomes very      4 important as to whether those line up or not.      5 Q. Okay. You're talking about the line on the      6 hood of the F250 and then the line on the roof of the      7 F250, correct?      8 A. That's correct.      9 Q. And those two lines don't appear to be      10 lined up to you?      11 A. That's correct.      12 Q. Okay. Have you done any kind of      13 measurement analysis or tried to draw a line from one      14 to the other?      15 A. I've held a piece of paper up to it and      16 it's pretty obvious when you line up -- if you put a      17 piece of paper up to one of the lines, it doesn't      18 line up with the other line.      19 Q. Okay. What time of day did this test      20 happen?      21 A. It would have been right before lunchtime.      22 Probably 11:00, 11:30 maybe.      23 Q. Okay. So that shadow that we see, that's      24 the shadow of the crane over the car?      25 A. That's correct.</p>

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<p>1 Q. Okay. So is it fair to say then that the      2 camera's at the edge of that crane?</p> <p>3 A. Yes.</p> <p>4 Q. Okay. Does that appear to you to be far      5 off from center?</p> <p>6 A. Again, visually I can't make an assessment      7 on that. You're asking about shadows and sun      8 position and whether a shadow cast by something is      9 going to dictate its location in space.</p> <p>10 Q. Well, we weren't there, so we don't really      11 know.</p> <p>12 A. Right.</p> <p>13 Q. Is there a way to look at the difference      14 that you're saying there is between the roof line and      15 the hood line and use that to estimate how much      16 distortion there is?</p> <p>17 A. You could take this video and do some      18 additional analysis and try and make an estimate of      19 where that camera is overhead in space, yes, that can      20 be done.</p> <p>21 Q. Okay. Has anyone asked you to do that?</p> <p>22 A. No.</p> <p>23 Q. All right. Okay. Can you see if you can      24 get it stopped right before impact?</p> <p>25 Nice.</p>	<p>1 A. -- lining it up perfectly there. So I'm on      2 the line of the roof, but I'm not on the line of the      3 hood.</p> <p>4 Q. Okay. Got it. Whoops.</p> <p>5 All right. I'm going to take that back      6 from you, and screenshot that picture that you just      7 drew on. Thank you. So that we can make it part of      8 the record. Stop sharing.</p> <p>9 Oh, shoot. Did I do it? Did I mess it up?</p> <p>10 Hold on. I messed it up, I'm sorry. Can you circle      11 one more time? This time it was my fault. Let me      12 change here.</p> <p>13 Okay. Thank you.</p> <p>14 A. The annotation tool bar disappeared.</p> <p>15 Q. Let's see --</p> <p>16 A. Technology's supposed to make our lives      17 easier, right?</p> <p>18 Q. That's what they say.</p> <p>19 Beautiful.</p> <p>20 All right. Now I'm going to take it      21 without stopping the screen share.</p> <p>22 Okay. Did it work?</p> <p>23 Okay. We got it.</p> <p>24 THE VIDEOGRAPHER: I backed it up too.</p> <p>25 MS. CANNELLA: Thank you. All right. And</p>
<p>1 All right. So, again, can you circle the      2 two lines you're talking about? I don't want to make      3 you draw the line from one to the other, because I      4 know your hand's not going to be steady. But just so      5 we can analyze it later.</p> <p>6 Okay.</p> <p>7 A. And that's where maybe if -- if -- I mean,      8 we can take it around like this, and if we take a      9 piece of paper --</p> <p>10 Q. Okay.</p> <p>11 A. -- and you line that up like that --</p> <p>12 Q. Uh-huh.</p> <p>13 A. -- you've got greater space there.</p> <p>14 Q. Let's see if we can get a close-up on it.</p> <p>15 Can you maybe scoot your hands over a little?</p> <p>16 THE VIDEOGRAPHER: Also, I'm sorry, your      17 laptop is in the shot.</p> <p>18 THE WITNESS: It's difficult to do looking      19 over the back.</p> <p>20 BY MS. CANNELLA:</p> <p>21 Q. I see that, yeah.</p> <p>22 A. But essentially this is the concept we're      23 looking at, where if you take this line here, and I      24 can't see if I'm --</p> <p>25 Q. You've got it.</p>	<p>1 then we'll mark that as Plaintiffs' Exhibit 122.</p> <p>2 THE REPORTER: We already have a 122.</p> <p>3 MS. CANNELLA: 123.</p> <p>4 THE REPORTER: We already have a 123.</p> <p>5 MS. CANNELLA: 124. Okay. I tried. I      6 failed.</p> <p>7 THE REPORTER: That's okay.</p> <p>8 (Marked for identification Exhibit 124.)</p> <p>9 MS. CANNELLA: All right. Moving on.</p> <p>10 MR. HILL: And that was just a screen      11 capture of where he circled the lines?</p> <p>12 MS. CANNELLA: Yes.</p> <p>13 Q. Okay. Can we agree that the F250 got off      14 course, to some degree?</p> <p>15 A. Yes.</p> <p>16 Q. Okay. And do we have any other way to      17 measure how much it got off course aside from the      18 video?</p> <p>19 A. Yes.</p> <p>20 Q. And that would be using the physical Ford      21 emblem, correct?</p> <p>22 A. That would be one of the things we can look      23 at, yeah.</p> <p>24 Q. And what else, scan data?</p> <p>25 A. Scan data. There is evidence from the tow</p>

<p style="text-align: right;">Page 162</p> <p>1 hook on the F250 into the bumper cover of the Ford      2 Escape. You can look at the damage pattern of the      3 Ford Escape and align the -- kind of the right edge      4 of the F250 up with the damage of the Ford Escape.      5 So there's several bits of physical evidence that      6 could be looked at and measured and scrutinized a      7 little bit more to determine what the exact offset      8 was for the crash.</p> <p>9 Q. And no one's asked you to do that at this      10 point?</p> <p>11 A. No.</p> <p>12 Q. The tow hook physical evidence --</p> <p>13 A. Yes.</p> <p>14 Q. -- is that in your photos?</p> <p>15 A. Yes.</p> <p>16 Q. All right. Where in your photos?</p> <p>17 A. So it's in the post-test photographs or the      18 test results section of the report. Let me see if I      19 can find you a photograph number. It shows up in      20 several photographs, because it is the bumper cover,      21 so you can kind of see the bumper cover in      22 photograph 404, 405. You can also see it when we      23 have it inside 422, 423, maybe 424.</p> <p>24 There's probably more photographs. I      25 haven't -- I haven't looked through it in detail to</p>	<p style="text-align: right;">Page 164</p> <p>1 Q. And you looked at the documents that are      2 requested in the notice of deposition?</p> <p>3 A. Yes.</p> <p>4 Q. And you produced everything you had?</p> <p>5 A. Yes.</p> <p>6 MS. CANNELLA: Okay. Then I'm going to      7 hand you Plaintiffs' Exhibit 121.</p> <p>8 (Marked for identification Exhibit 121.)</p> <p>9 BY MS. CANNELLA:</p> <p>10 Q. Is this your complete correspondence --</p> <p>11 A. Yes.</p> <p>12 Q. -- on the case?</p> <p>13 And your first contact about the case, do      14 you know when that was?</p> <p>15 A. Absolute first contact --</p> <p>16 Q. Yes, sir.</p> <p>17 A. -- would have been back in November of '22.</p> <p>18 It would have been -- there's a retention letter,      19 dated back in November.</p> <p>20 Q. And was it Mr. Grimes that reached out to      21 you or a lawyer?</p> <p>22 A. It would have been an attorney.</p> <p>23 Q. Okay. On your invoices I want to go      24 through and make sure I understand those charges.      25 Do you have those in front of you?</p>
<p style="text-align: right;">Page 163</p> <p>1 determine every photo that the bumper cover, the      2 Escape shows up in, but --</p> <p>3 Q. Can you do me a favor and see if you can      4 find what you think might be one of the best ones and      5 circle it for us?</p> <p>6 A. So I think 422 probably gives a pretty good      7 view of it, whether it's the best or not. Maybe 404      8 also -- do you want me to circle it in both of them?</p> <p>9 Q. Yes, please.</p> <p>10 A. And the -- just the photo number or do you      11 want me to circle the tow hook --</p> <p>12 Q. The tow hook.</p> <p>13 A. -- location?</p> <p>14 Okay.</p> <p>15 Q. Great.</p> <p>16 I'm going to enter the Notice of Videotaped      17 Deposition as Plaintiffs' Exhibit 120.</p> <p>18 (Marked for identification Exhibit 120.)</p> <p>19 BY MS. CANNELLA:</p> <p>20 Q. And you've looked through this, correct?</p> <p>21 A. Sorry, give me one moment.</p> <p>22 Q. Oh, sorry.</p> <p>23 A. There we go.</p> <p>24 Q. Okay. Have you seen that document before?</p> <p>25 A. Yes.</p>	<p style="text-align: right;">Page 165</p> <p>1 A. Yes.</p> <p>2 Q. All right. So the total fee for the crash      3 test was 68,000, correct?</p> <p>4 A. For the first test, yes.</p> <p>5 Q. All right. And the second test would have      6 been 58,000, but that was not charged, correct?</p> <p>7 A. A portion of that was charged for that      8 preliminary setup, but we didn't charge the full      9 amount, no, because we didn't run the test.</p> <p>10 Q. Okay. Well, let's get to that, then. That      11 will be in the documents?</p> <p>12 A. Yes.</p> <p>13 Q. Okay. So this first invoice, the first      14 page on it, it says 7,420, is that just charged      15 against the 68,000?</p> <p>16 A. No. So that is total for both the crash      17 testing portion and the phone conference that we had.</p> <p>18 Q. Okay. So, so far we've got 68,000 plus      19 620?</p> <p>20 A. So we've only charged 6,800 for this      21 portion, because we hadn't completed the test at that      22 point.</p> <p>23 Q. Okay. I'm not going to add up all the      24 little test pieces as we go --</p> <p>25 A. Okay.</p>

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1 Q. -- so we'll just not -- we'll give freebies 2 for the rest of those. 3 Okay. So 620 for your hours there. And 4 then it looks like page 3, is that the same, 620? 5 A. Yes. 6 Q. Okay. All right. Page 4, the May 24th 7 invoice -- oh, it looks like the rest of the crash 8 test is done there -- so at that point we have the 9 full 68,000 charge? 10 A. Correct. 11 Q. And then was this second section down here 12 where it says, "Task, additional testing"? 13 A. Yes. So that would have been for the 14 second test. 15 Q. All right. And instead of charging the 16 full 58,000, Exponent charged 10,250, correct? 17 A. Correct. 18 Q. Okay. And that's because it was 17.6724 19 percent completed? 20 A. Yes. 21 Q. Where does that number come from? 22 A. It comes from taking \$10,250 and dividing 23 it into 58,000. 24 Q. Fair enough. 25 Q. Okay. And then the next page we've got	1 represented in the reimbursables? 2 A. So tires and wheels and other supplies as 3 needed, they would -- and probably tow -- I think 4 this includes tow charges for getting the vehicles to 5 our facility and shipping charges if we had any of 6 those, so it's lumped into stuff we had to pay out of 7 pocket that we are getting reimbursed for. 8 Q. And the total reimbursables is \$136,824.13? 9 A. Yes. 10 Q. And what's "unit billing"? 11 A. So unit billing would be we have certain 12 pieces of equipment or other things that we charge 13 out that we don't have a necessarily -- we're not 14 buying it, but we're using it and it's not part of 15 the crash test entity. Let me look further through 16 here to see what the unit's charging would be here. 17 Q. It looks like it's vehicle titles? 18 A. Okay. It's vehicle titling fee to get the 19 title from wherever we purchased it from and 20 transferred to us. 21 Q. All right. And then this page 4 of this 22 invoice shows the itemized for all those 23 reimbursables, correct? 24 A. Yes. 25 Q. All right. And it's got the itemized for
Page 167	Page 169
1 \$930 for your hours, correct? 2 A. Yes. 3 Q. You may want to write this down, because 4 I'm going to ask you if my math is correct at the 5 end. 6 Do you want a piece of paper? 7 A. Yes, please. 8 Q. Okay. 9 MR. HILL: Here, I can give it to him. 10 MS. CANNELLA: Oh, good. 11 Q. All right. So to recap, we've got 68,000 12 for the then-completed crash test, 10,250 for the 13 uncompleted crash test, 620 for your hours on the 14 first invoice, and 930 on this present invoice. 15 And then, moving on, we have the May 24th 16 invoice has a professional personnel section? 17 A. Yes. 18 Q. Okay. So Paul Terry is charging \$2,310, 19 correct? 20 A. Yes. 21 Q. And then we've got some reimbursable 22 supplies down here, is that the vehicles, in addition 23 to other things? 24 A. Yes. 25 Q. Okay. What else besides the vehicles is	1 Mr. Terry's time, but we've already taken that into 2 account. So then we've got the July 25th, 2023 3 invoice, and it's \$300 for vehicle storage, correct? 4 A. Sorry, give me a moment to catch up, you're 5 on the June 30 invoice? 6 Q. Oh, did I skip one? I think we -- 7 MR. HILL: It's services through June 30th, 8 but the date -- 9 MS. CANNELLA: Oh, I got it. 10 THE WITNESS: Sorry, did I -- 11 BY MS. CANNELLA: 12 Q. I was looking at the date of the actual 13 invoice. 14 A. Gotcha. 15 Q. It's July 25th, '23. So that has the \$300 16 in storage. Is that for all four vehicles? 17 A. That's actually for just the two tested 18 vehicles. 19 Q. Okay. Where are the other two vehicles? 20 A. They're also at our facility, but because 21 we haven't tested them yet, it's kind of up to the 22 test engineer as to when we want to start testing 23 storage, if we want to test storage -- or, sorry, if 24 we want to charge storage. We charge storage 25 immediately after a crash test is done, because the

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1    vehicles aren't going anywhere. There's not going to 2    be any additional use for them.	1    BY MS. CANNELLA: 2       Q. And it would have cost \$47,750 to do the 3    second crash test, right?
3    Q. So right now Exponent's not charging Rough 4    Country for storing the two untested vehicles?	4       A. Yeah, approximately, additional. Based on 5    what would have been left to charge on that, yeah.
5    A. That's correct.	6       Q. All right. And the storage fees are \$300 a 7    month; is that right?
6    Q. But it does have all four vehicles on its 7    property?	8       A. Correct.
8    A. That's correct.	9       Q. All right. I think I'm almost done or am 10   done. Let me see.
9    Q. Okay. Got it.	11           Oh, does it -- does a diesel fuel vehicle 12   have a different -- like, does the engine weigh a 13   different amount?
10       Okay. And then the next invoice is 11   August 24th, 2023, and we've got the \$300 storage fee 12   again; is that right?	14       A. Yes, they typically do.
13       A. You said August 24?	15       Q. And the F250 in this case was a diesel?
14       Q. Yes, sir.	16       A. I believe so. I can check for you.
15       A. Yes.	17           Yes, it was.
16       Q. All right. And then it looks like we've 17   got that -- that's the only charge on September 27th, 18   2023, as well?	18       Q. And would that matter or does the 19   ballasting account for that, if the subject vehicle 20   was a diesel, would the ballasting account for that 21   difference?
19       A. Yes.	22       A. We can ballast for differences like that --
20       Q. And October 25th, 2023?	23       Q. Okay.
21       A. Yes.	24       A. -- if we need to.
22       Q. And November 21st, 2023?	25       Q. Was that done here?
23       A. Yes.	
24       Q. And December 28th, 2023?	
25       A. Yes.	
Page 171	Page 173
1    Q. And January 11th, 2023?	1    A. No.
2       I'll let you go through this, because it 3   looks like that's what we've got for February as 4   well, and March.	2       Q. Okay. And did you take any measurements of 3   the displacement of the second row seat after the 4   crash was -- crash test was completed?
5       A. Did we go up through March?	5       A. No.
6       Q. Yeah, so if you want to go ahead and add 7   those instead of me reading them all to you, that 8   would be great.	6       Q. Did you see anybody else take those 7   measurements?
9       A. I've got my phone off, if someone has a 10   calculator I can borrow.	8       A. Other than the scans of the vehicle, which 9   does kind of measure in kind of a round-about way, 10   other than that, not that I saw.
11       MS. CANNELLA: Can you share your phone 12   with him so I don't hand over mine.	11       Q. Do you know if a scan of the inside of the 12   vehicle was taken?
13       Thank you.	13       A. I don't.
14       Q. Do you have it?	14       Q. And do you know if any measurements were 15   taken before the crash test of the distance of the 16   location of the seat from any particular place?
15       A. Yes.	17       A. I don't recall if Ms. Grimes did a pre-test 18   scan of our particular vehicle. I know, like I said, 19   I know she did a post test, but I don't remember if 20   she did anything pre test.
16       Q. What's the total?	21       Q. But you didn't see any expert in there with 22   a measuring tape, correct?
17       A. So I have a total through March of 18   \$222,634.13.	23       A. I don't remember any, no.
19       Q. 222,600 and --	24       MS. CANNELLA: Okay. That's all I have.
20       A. 34.	25       MR. HILL: All right. Thank you.
21       Q. And that's how much RC paid to Exponent for 22   crash testing, including your services, correct?	
23       MR. HILL: Object to the form.	
24       But go ahead.	
25       THE WITNESS: Correct.	

	Page 174	Page 177
1	Do you want to read and sign?	1 Richard H. Hill
2	THE WITNESS: (No audible response.)	2 rhill@wwhgd.com
3	MR. HILL: Yes.	3 May 31, 2024
4	THE VIDEOGRAPHER: This concludes today's	4 RE: Bryson, Santana And Joshua v. Rough Country, LLC
5	deposition. We're going off the record. The time is	5 5/14/2024, Charles Crosby, PE (#6696090)
6	1:04.	6 The above-referenced transcript is available for
7	(Off the videotaped record.)	7 review.
8	THE REPORTER: Mr. Hill, do you want a copy	8 Within the applicable timeframe, the witness should
9	of the transcript?	9 read the testimony to verify its accuracy. If there are
10	MR. HILL: I do.	10 any changes, the witness should note those with the
11	THE REPORTER: And do you want the	11 reason, on the attached Errata Sheet.
12	transcript as well?	12 The witness should sign the Acknowledgment of
13	MS. CANNELLA: Yes, ma'am. I'll take a	13 Deponent and Errata and return to the deposing attorney.
14	synched video as well, please. Thank you.	14 Copies should be sent to all counsel, and to Veritext at
15	(Proceedings concluded at 1:05 p.m.)	15 cs-southeast@veritext.com.
16		16 Return completed errata within 30 days from
17		17 receipt of testimony.
18		18 If the witness fails to do so within the time
19		19 allotted, the transcript may be used as if signed.
20		20
21		21
22		22 Yours,
23		23 Veritext Legal Solutions
24		24
25		25
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1	STATE OF ARIZONA )	1 Bryson, Santana And Joshua v. Rough Country, LLC
	COUNTY OF MARICOPA )	2 Charles Crosby, PE (#6696090)
2		3 E R R A T A S H E E T
3	CERTIFICATE	4 PAGE ____ LINE ____ CHANGE _____
4	I, ROBIN L. B. OSTERODE, Certified Shorthand	5 _____
5	Reporter for the State of California and Certified	6 REASON _____
6	Reporter for the State of Arizona certify:	7 PAGE ____ LINE ____ CHANGE _____
7	That the foregoing proceeding was taken by	8 _____
8	me; that I am authorized to administer an oath; that	9 REASON _____
9	any witness, before testifying, was duly sworn to	10 PAGE ____ LINE ____ CHANGE _____
10	testify to the whole truth; that the questions and	11 _____
11	answers were taken down by me in shorthand and	12 REASON _____
12	thereafter reduced to print by computer-aided	13 PAGE ____ LINE ____ CHANGE _____
13	transcription under my direction; that review and	14 _____
14	signature was requested; that the foregoing pages are	15 REASON _____
15	a full, true, and accurate transcript of all	16 PAGE ____ LINE ____ CHANGE _____
16	proceedings, to the best of my skill and ability.	17 _____
17	I FURTHER CERTIFY that I am in no way	18 REASON _____
18	related to nor employed by any of the parties hereto,	19 PAGE ____ LINE ____ CHANGE _____
19	nor am I in any way interested in the outcome hereof.	20 _____
20	DATED this 28th day of May, 2024.	21 REASON _____
21		22 _____
22		23 _____
23		24 Charles Crosby, PE Date
24		25
	KOBIN L. B. OSTERODE, CSR, RPR	
	CA CSR No. 7750	
	AZ CR No. 50695	

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1 Bryson, Santana And Joshua v. Rough Country, LLC

2 Charles Crosby, PE (#6696090)

3 ACKNOWLEDGEMENT OF DEPONENT

4 I, Charles Crosby, PE, do hereby declare that I  
5 have read the foregoing transcript, I have made any  
6 corrections, additions, or changes I deemed necessary as  
7 noted above to be appended hereto, and that the same is  
8 a true, correct and complete transcript of the testimony  
9 given by me.

10

11 \_\_\_\_\_

12 Charles Crosby, PE Date

13 \*If notary is required

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[ability - agree]

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[area - ballast]

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

## VERITEXT LEGAL SOLUTIONS

## COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted

fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

Veritext Legal Solutions complies with all federal and State regulations with respect to the provision of court reporting services, and maintains its neutrality and independence regardless of relationship or the financial outcome of any litigation. Veritext requires adherence to the foregoing professional and ethical standards from all of its subcontractors in their independent contractor agreements.

Inquiries about Veritext Legal Solutions' confidentiality and security policies and practices should be directed to Veritext's Client Services Associates indicated on the cover of this document or at [www.veritext.com](http://www.veritext.com).